DISTRIBUTION AGE

MAY, 1948

Only Skylift ELECTRIC TRUCKS GIVE YOU High Pressure Hydraulic Lift

Skylift takes load through low doorways, then tiers the product inside, with low ceilings no handicap. BELOW, you see the same Skylift tiering 130 inches high in high-ceiling warehouses . . . a dual operation made possible by high pressure hydraulic lift.

Automatic is First With Most Great Features

1 Caster type steering axle, center pivoted and shock-proof. Compensates for uneven floor conditions. Provides easier steering, prevents transmission of road shock to steering wheel.

2 Air-cooled disk brake. Mounted on end of motor where brake torque is least. This greatly prolongs life, gives greater braking surface, insures positive and smooth stopping.

3 Full automotive type controls. Brake pedal and foot accelerator same as a car. One lever controls lift and tilt, the other forward and reverse. NEW-matic controller gives smooth, timed automatic acceleration through all speeds.

4 Lift, tilt and drive simultaneously or independently with easy finger-tip and foot control regardless of load conditions. The only hydraulic industrial truck that does not sacrifice lift or tilt performance to accomplish this feature, because only Skylift has High Pressure Hydraulic Lift and Tilt.

Skylift
ELECTRIC TRUCKS
A PRODUCT OF AUTOMATIC
Lighter LIFE'S LOADS

● Before you buy any industrial truck ask: "Has it *high pressure* or *low pressure* hydraulic lift?" You see, here is why it's so important to you.

Low pressure systems are fast becoming antiquated. *High pressure* hydraulic lift is a *modern, up-to-date system*—it is compact and efficient—and therefore, trucks so equipped can be much smaller in design to obtain better results.

There are other advantages, too. With Automatic's exclusive patented design, using *high pressure* hydraulics, you can *raise forks to maximum height of single lift,* before *increasing overall height of uprights.* Forks raise *67 inches before uprights begin to extend!*

As you see by the pictures at the left, you get easy entry into box cars and other low clearance portals. You tier to maximum height without uprights jabbing into ceilings. The same Skylift also tiers up to 130 inches high, giving you a complete handling system for both LOW and HIGH CLEARANCE moving and tiering.

Only Automatic Skylifts offer you this double-duty money-saving feature, because ONLY Skylift Electric Trucks are equipped with HIGH PRESSURE Hydraulic Lift. No other industrial trucks have it, no others can offer it, because it is a PATENTED Automatic feature. Mail coupon.

Only Automatic GIVES YOU "BURN-OUT PROOF" Silicone Insulated Motors

● Constant starting, stopping, reversing and overloading gives a motor an awful beating—often causes overheating, which means motor failure, trucks out of service.

Automatic foresaw the demands which would be put on Skylift Electric Trucks, so gave you the protection of SILICONE MOTOR INSULATION. This is an exclusive silicone varnish and silicone lubricant that protects Skylift motors, even if overloaded, and even after exposure to temperatures of 300 to 400 degrees Fahrenheit.

This means no armature or field coil failure, no trucks laid up for motor repair, no interruption of Skylift's smooth, efficient money-saving material handling operation. NO OTHER industrial trucks offer this EXCLUSIVE feature! Mail coupon.

AUTOMATIC TRANSPORTATION COMPANY
DIV. OF THE YALE AND TOWNE MFG. CO.
115 W. 87th St. Dept. E-8, Chicago 20, Ill.

( ) Send details on Automatic's Skylift Electric Trucks and *exclusive* HIGH PRESSURE HYDRAULIC LIFT.

( ) Have an ATCO Specialist make a free survey of our material handling costs.

Company Name .....
By .....
Street Address .....
City ..... Zone ..... State .....

This BAKER TRUCK Box Score Indicates a Winner!

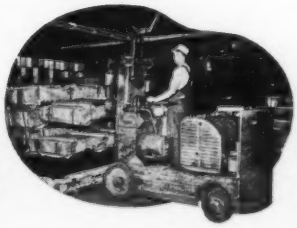
CUSTOMER: Appliance Division, The Cavalier Corp., Chattanooga, Tenn.

PRODUCTS: Coca-Cola cooler-dispenser, Quaker Oil space heater.

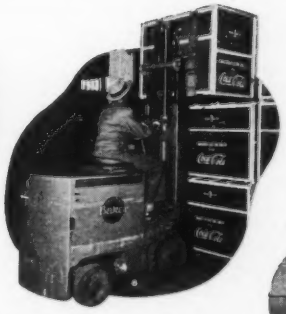
TRUCKS: 6 Baker Fork Trucks—4 2000-lb. and 2 6000-lb. capacity

OPERATION	TRUCKS USED	RESULTS
Unloading steel sheets in 3-ton skidded packages from gondola cars (50 tons per car). Transporting to storage and tiering.	Baker 6000-lb. Fork Trucks	48 man hours cut to 4. Formerly took 6 men 8 hours for unloading alone. Now 2 men safely unload *and store* a carload in 2 hours.
Handling steel sheets from stores into production line.	Baker 6000-lb. Fork Trucks	More man hours saved. Aisles kept clear.
Handling and storing dies for stamping and blanking departments.	Baker 6000-lb. Fork Trucks	Time and storage space saved.
Moving finished products in cases to storage.	Baker 2000-lb. Fork Trucks	Operation speeded 50%. Warehouse capacity increased 50%.
Moving finished products from storage into boxcars.	Baker 2000-lb. Fork Trucks	16 man hours cut to 1. Formerly took 4 men 4 hours to load a car. Now 1 man does it in about 1 hour.

Baker 6000-lb. Fork Truck unloading skidded 6-ton packages of sheet steel from gondola cars with chain sling.

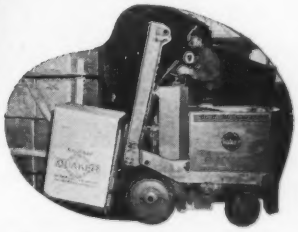


Same truck tiering sheet steel packages in storage department.



Baker 2000-lb. Fork Truck tiering cases of finished product in warehouse.

Baker 2000-lb. Fork Truck loading cases into boxcars.



The Baker Material Handling Engineer is at your service to help you improve your material handling box score.

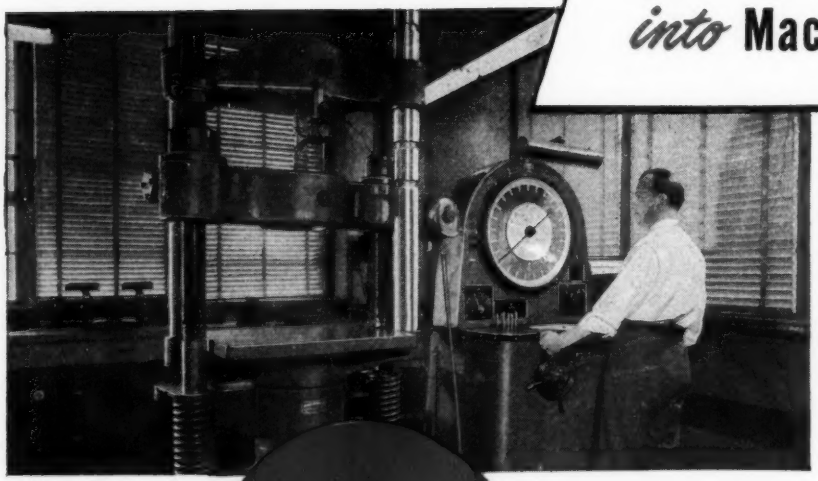
BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
2176 West 25th Street • Cleveland, Ohio
In Canada: Railway and Power Engineering Corporation, Ltd.

Baker INDUSTRIAL TRUCKS

"On long runs and over hilly country our Mack is less fatiguing to drivers because of the simple handling and remarkable efficiency of the Mack Mono-Shift transmission." Thus, A. A. Meisinger of Long Island City, N. Y., expresses his satisfaction with Mack's new Mono-Shift.

You get more work *out* of Mack Trucks

because...we put more work *into* Macks



Superior performance of Mack trucks is the result of uncompromising quality standards of materials, workmanship and engineering. These standards are safe-guarded by the most exhaustive research, testing and inspection in the truck industry. This massive test unit, for example, is used in Mack's research laboratory to determine tensile, compression and deflection strength of materials.

Mack trucks for **every purpose**

SINCE 1900, AMERICA'S HARDEST WORKING TRUCK

Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

This month's cover shows a train loaded with ore being delivered to keep the wheels of industry turning . . . The soft coal miner on strike slows the wheels of transportation, causes steel mills and factories to close their doors and impedes the flow of life blood in our economy . . . Our distributive system is similarly affected when there is poor coordination and integration at those points where one distributive activity connects with the other. Photo by Ewing Galloway.

DISTRIBUTION AGE

The Magazine That Integrates All Phases Of Distribution

100 E. 42nd St., New York 17

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VOL. 47, NO. 5 **May, 1948**

Special Features

Departments

STATEMENT OF POLICY . . . Our policy is based on the premise that distribution embraces all activities incident to the movement of goods in commerce. If distribution is to be made more efficient and economical, we believe business management must consider more than sales, because more than sales are involved. Marketing, while vital, is one phase only of distribution; seven other practical activities not only are necessary but condition marketing costs. Most commodities require handling, packing, transportation, warehousing, financing, insurance, and service and maintenance of one kind or another before, during or after marketing. We regard all of those activities as essential parts of distribution. Hence, the policy of DISTRIBUTION AGE is to give its readers sound ideas and factual information on methods and practices that will help them to improve and simplify their operations and to standardize and reduce their costs in all phases of distribution.

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Midwestern cities include Chicago, Detroit, Cleveland and Milwaukee — the industrial heart of the U.S.

Far west cities such as Denver, Salt Lake, Los Angeles, San Francisco, Portland, Seattle and Honolulu, are also on United's strategic Main Line Airway.

Seventy-five U.S. cities in all are served by United; scores of others can be reached easily by connecting airlines and truckers. New, low rates — as low as 12½ cents a ton-mile — are now in effect. For information, call your local representative or write: *United Air Lines, Cargo Sales Division, 5959 S. Cicero Ave., Chicago 38, Ill.*

UNITED AIR LINES

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90% of all ELWELL-PARKERS sold since 1928 are still going strong!

Master unit load ready to ship.

● This fact is ample evidence that E-P trucks offer you the maximum in sound design and quality construction.

Another fact: Elwell-Parker's 42 years' experience in the industrial truck field is *unequalled*—consequently, our application knowledge is greater and more varied.

AND, Elwell-Parker does far more than merely supply 47 basic models—it "tailors" them to *your* specific materials handling condition. Already this individual engineering has been profitably applied in *over 300 branches of industry.*

Many basic truck attachments pioneered by Elwell-Parker—such as sideshifting and pushoff devices—are becoming standard throughout the industry. However, E-P trucks still offer many exclusive advantages. *An important example:*—only Elwell-Parker uses Class B motors exclusively. These motors cost more, but are well worth it—they handle 500% overload, are practically indestructible and fire proof.

WHAT DOES ALL THIS ADD UP TO? In durability, engineering experience, versatility, improved design, and services of the EP man on the job, *Elwell-Parker offers you more per dollar invested in industrial power trucks.* THE ELWELL-PARKER ELECTRIC COMPANY, 4110 St. Clair Avenue, Cleveland 14, Ohio.

Free Booklet on Scientific Materials Handling

Send for a copy of "Industrial Logistics"

ELWELL-PARKER

Established 1893

POWER INDUSTRIAL TRUCKS

Trucks shown are standard models with de luxe grilles.

MORE NEW FEATURES... FOR NEW GMCs

For 1948, light and medium GMCs add important new comfort and convenience features to the many introduced in 1947.

There's a new Steering Column Gearshift and Foot-Operated Parking Brake on light duty models . . . a re-designed 3-speed Syncro-Mesh Transmission for these units . . . and a brand new *4-speed Syncro-Mesh* Transmission, standard on trucks of 8,800 to 16,000 pounds, optional on the lighter lines.

GMCs led the parade with bigger cabs . . . more comfortable, adjustable seats . . . fresh air ventilation . . . a dozen other features. Now they're even farther in the lead. For everything that's new, choose a good looking, easy driving 1948 GMC.

THE TRUCK OF VALUE

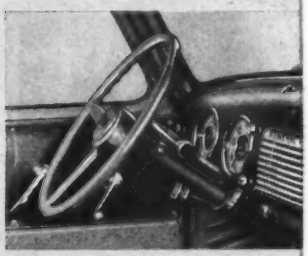
GMC TRUCKS

GASOLINE • DIESEL

NEW

Cab-Over-Engine Models, Too!

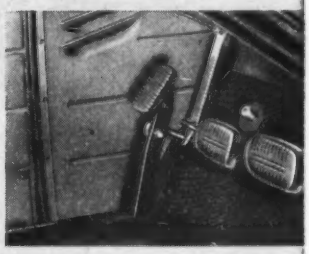
GMC scores again for 1948 with sparkling new medium duty cab-over-engine trucks of the same outstanding styling and comfort . . . the same stronger, sturdier chassis . . . the same war-proved engines offered in conventional designs.



NEW

STEERING COLUMN GEARSHIFT

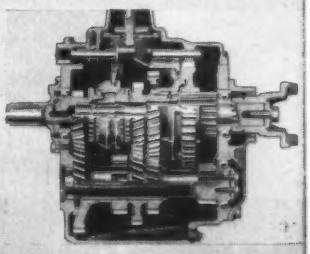
Gives drivers of 3-speed GMCs passenger car handling ease. Also . . . faster shifting, unobstructed entrance from either side. Standard on FC-100, 150 models.



NEW

FOOT-OPERATED PARKING BRAKE

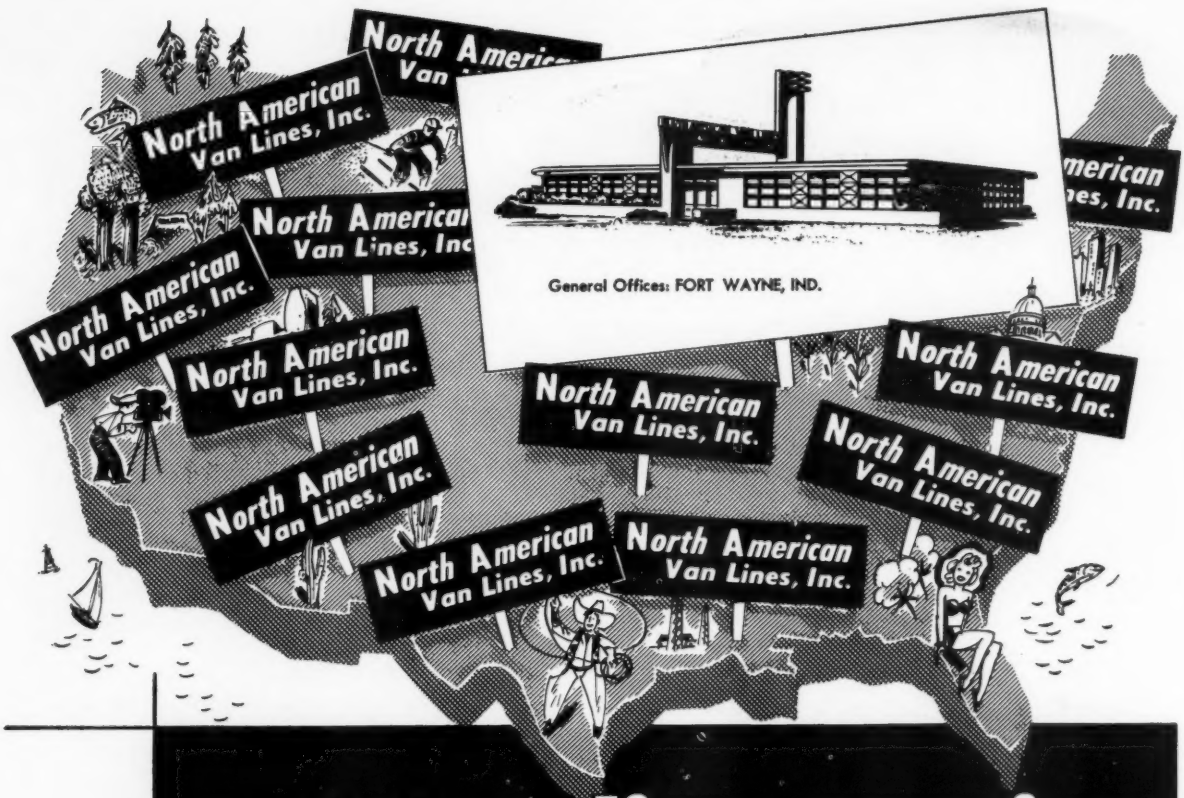
Makes parking and starting quicker, easier, surer on level or hills through foot pressure, hand release and self-energizing lock. Standard on FC-100, 150 models.



NEW

SYNCRO-MESH TRANSMISSIONS

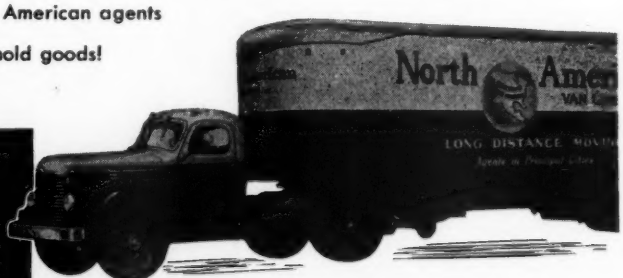
Provides smooth, fast, clashless shifting, up or down . . . less wear and tear on driver and truck. Another outstanding addition to GMC design and efficiency.



outstanding service

put North American all over the map!

When you want your household goods moved, call North American *first*. North American's record of outstanding service is your absolute guarantee of satisfaction. You can call any North American agent—instruct him to move your household goods to any part of the country, and know in advance that you're going to be completely satisfied. North American agents and warehouses in principal cities make it easy for you to get this friendly, unexcelled service. Consult your phone book for the agent nearest you . . . and remember North American agents are the Nation's safest movers of household goods!



North American
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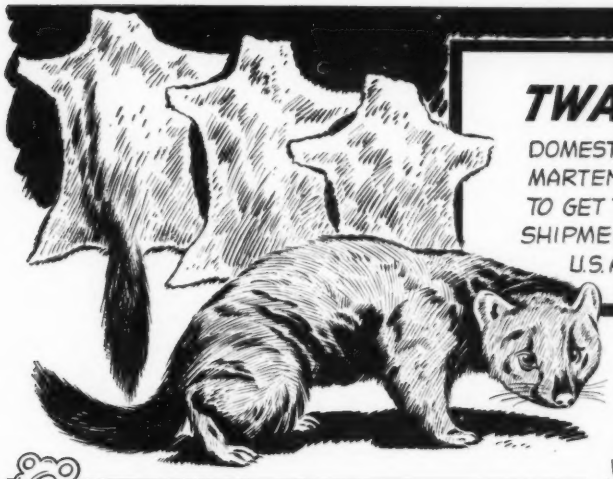
GENERAL OFFICES: FORT WAYNE, IND.

. . over **500** agents to serve you

ALONG THE WAY...OF *TWA*



TWA MAKES THE FUR FLY

DOMESTIC FUR BUYERS DEMANDED STONE MARTENS IN A HURRY. EASIEST, QUICKEST WAY TO GET THEM WAS VIA ***TWA*** AIR CARGO. SHIPMENTS LEFT PARIS ONE DAY...ARRIVED IN U.S.A. THE NEXT. SIMPLIFIED PACKING, TOO.

KEY TO TREASURES

LOCK AND KEY GUARD VALUABLES ON ***TWA*** INTERNATIONAL ALL-CARGO FLIGHTS. THEY'RE CARRIED IN TON-SIZED "STRONG BOX" BUILT INTO FUSELAGE OF PLANE. FLIGHT CARGO AGENT ON EACH TRIP.

WHAT'S YOUR PROBLEM?

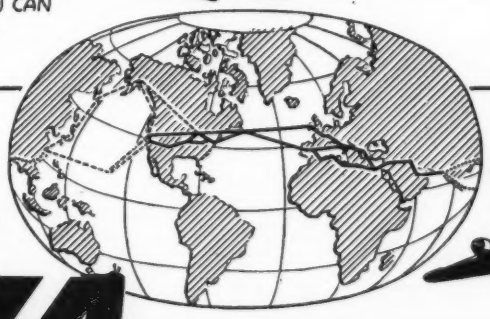
WHENEVER YOU HAVE A "RUSH" SHIPMENT...CALL ***TWA*** (SEE PHONE BOOK). AIR CARGO AGENTS GLADLY ANSWER QUESTIONS...HELP ROUTE SHIPMENTS BEST WAY.

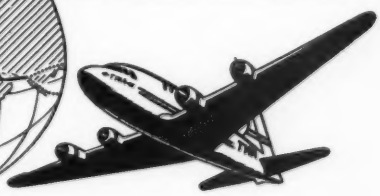
MILWAUKEE BEER "HOPS" TO CEYLON....

RECENT MILWAUKEE BILL OF LADING DECLARED: "TWO BOTTLES OF BEER...DESTINATION CEYLON." GIFTS VIA ***TWA*** AIR CARGO GET THERE QUICKLY...SAFELY. YOU CAN SHIP ALMOST ANYTHING THIS EASY WAY.

SHIPPING THE WAY OF *TWA* ...SAVES ON INSURANCE

WHY? BECAUSE SHIPMENTS ARRIVE SOONER. OVER-ALL RATES (EVEN WITH MORE EXTENSIVE COVERAGE) ***TOTAL LESS THAN FOR SURFACE SHIPMENTS.***





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TWA reserves space for your shipment at any time you say. Big, 4-engine, All-Cargo planes handle international shipments on frequent schedules. There's no delay via TWA, and rates are lowest in TWA history.

TWA

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DIRECT SKY ROUTE TO MAJOR MARKETS

TWA Air Cargo flies high, fast and direct to Europe, Africa, Asia ... with no off-line handling. Facilitates shipping. Call TWA today, or ... if shipment is for overseas ... any international freight forwarder can also give you complete information.

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Only the Printing Calculator does *all* your figure work with printed proof of accuracy. It multiplies and divides automatically, adds and subtracts—*and* simultaneously prints the factors and answer of each calculation.

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DO YOU KNOW?

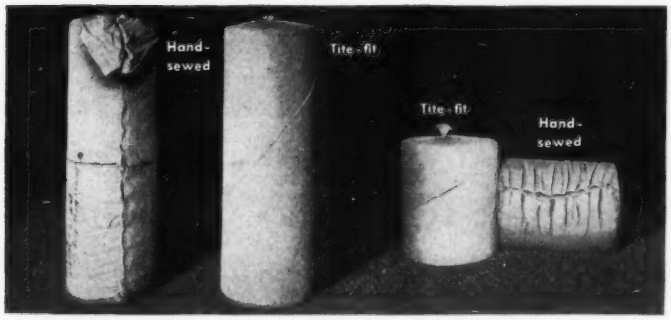
By Using BEMIS TITE-FIT TUBING

YOU

REDUCE labor and material costs, because you:
ELIMINATE handling heavy bales of burlap.
ELIMINATE time required to open bales and remove bale coverings.
ELIMINATE time required to cut burlap into sheets.
ELIMINATE using more burlap than necessary.
ELIMINATE all hand sewing.
IMPROVE the appearance of your rolls.

YOUR CUSTOMERS

RECEIVE neat packages that are easy to handle, because there's a handy ear on each end.
SAVE TIME as TITE-FIT TUBING is easily and quickly removed. Just untwist wire tie at one end and slip tubing off.
ELIMINATE chance of cutting into contents and damaging goods, as no cutting of sewing thread or goods is necessary.



This versatile tubing fits almost any shape and a wide range of package sizes. One roll may cover many different diameters and lengths neatly, without waste because TITE-FIT TUBING has *stretch* in both directions.

5 QUICK STEPS

That's all . . . when you package with Tite-Fit Tubing

1. Pull tube well down over object leaving an overage to cover bottom.

2. Turn package on side and fasten tube at bottom with a wire tie.

3. Turn package upright and use both hands to take up slack.

4. Fasten top with a wire tie close to object to assure tight fit.

5. Cut off the Tite-Fit Tubing about 3 inches above the wire tie.

BEMIS BRO. BAG CO.

Brooklyn 32, New York

Canadian Bag Co., Montreal, and the Ontario Bag Co., Port Colborne, Ontario, are licensed manufacturers of TITE-FIT TUBING in Canada.

MAIL COUPON NOW

Bemis Bro. Bag Co.
5120 Second Ave., Brooklyn, N. Y.

☐ Send descriptive folder on TITE-FIT TUBING
☐ Send sample. Our packages are approximately _____ inches in circumference. (Please specify)

Name _____

Firm _____

Street _____

City _____ *Zone* _____ *State* _____

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CAPITAL — $3,600,000
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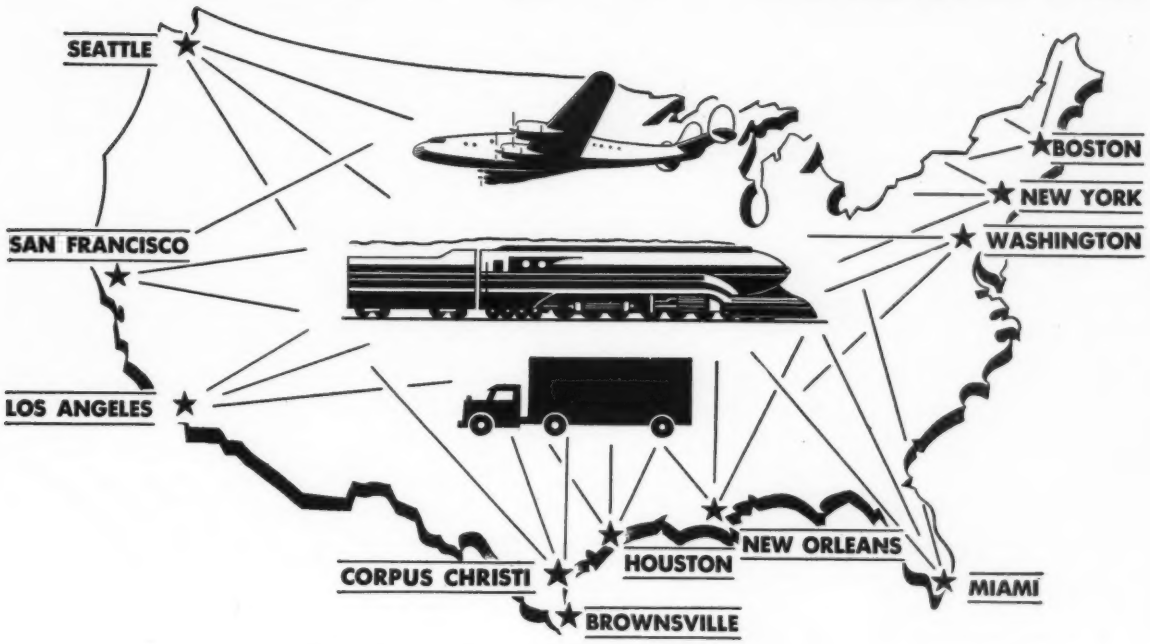
The Manhattan STORAGE & WAREHOUSE CO.

7th AVENUE and 52nd STREET, NEW YORK 19, N. Y. — CIRCLE 7-1700

You get *personalized* service on

CLIPPER CARGO



172 Specially-Staffed Shipping Agents and 12 Domestic Airlines speed your goods to Pan American Gateways

TODAY, wherever international trade flows, Clipper Cargo flies. From the 11 conveniently located gateways shown above, Pan American speeds your shipments to Europe, Africa, the Near East and India; to Central and South America; to New Zealand and Australia; and to Asia and Alaska. Only Pan American flies between all 6 continents and *no airline in the world flies to so many principal cities throughout the world.*

You'll find Clipper Cargo saves you money on bulk shipments (25% less for over 100 pounds). You save, too, with low-cost insurance, lower inventories and warehouse costs, C.O.D. and collect services, faster turnover of your money, and lower packing costs.

172 local shipping agents and 12 domestic airlines are ready to speed your goods to Pan American gateways. For full information, call your Shipping Agent or any of our offices listed below.

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Miami: Miami 3-7383
New Orleans: Canal 6391
New York: Stillwell 6-0600
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PAN AMERICAN WORLD AIRWAYS

SHIP BY PAA CLIPPER CARGO

STEELCRAFT NOW PRESENTS AMAZING NEW METAL BUILDING WITH 50' CLEAR SPAN

Solve Your Warehouse and Production Space Problems!

READY FOR DELIVERY NOW!

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- **Multiple Widths—Any Length!**
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No matter what your need . . . regardless how urgent your demand . . . there is a STEELCRAFT metal building to meet *YOUR* requirements—available *right NOW!* Indestructibly permanent, yet easily erected with ordinary tools, STEELCRAFT Metal Buildings answer a thousand utility purposes. STEELCRAFT 50' clear span buildings, engineered to meet local building codes, are furnished complete with ribbed aluminum side wall and roof panels; or, you can order the structural steel frame for use with various other types of wall and roof covering. Other STEELCRAFT Buildings are available in sizes suited to your specific needs. Write now for complete information on the STEELCRAFT building line . . . or request our engineers make a survey of your building problems.

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Storage Buildings
Foundries
Commercial Garages
Chemical Plants
Oil Refineries
Repair Shops
Railroad Shops

Let Our Experienced Engineers Make a Survey of Your Building Needs . . . at No Charge!

STEEL Craft
REG. U.S. PAT. OFF.

Get the Facts Today—**NO OBLIGATION**

STEELCRAFT
MANUFACTURING COMPANY
ROSSMOYNE (CINCINNATI), OHIO

MAIL THIS COUPON NOW!

Steelcraft Manufacturing Company,
9064 Blue Ash Road,
Rossmoyne, Ohio, (In Greater Cincinnati)

☐ Please send engineer to survey my building requirements.

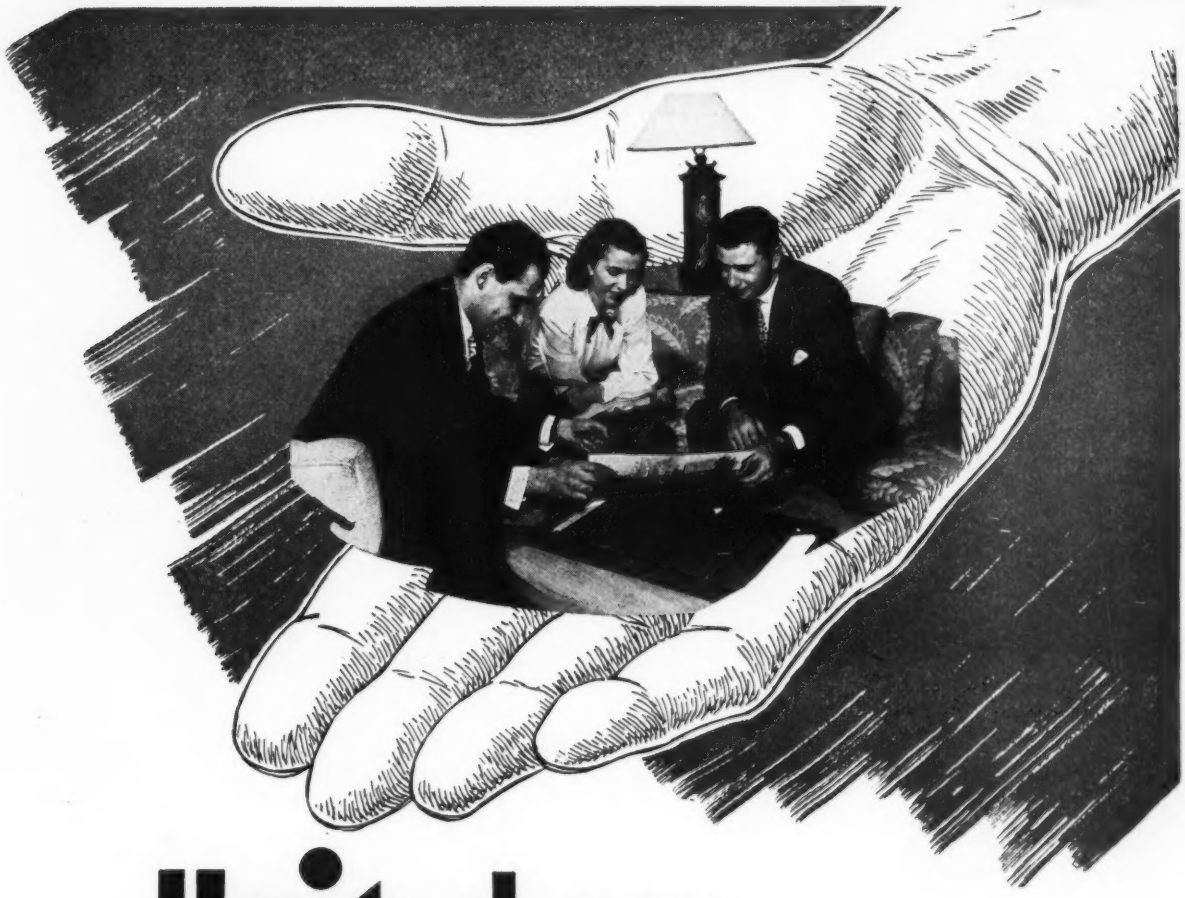
☐ Please send me complete information on Steelcraft Metal Buildings.

NAME.....

POSITION.....

BUSINESS ADDRESS.....

CITY.....STATE.....



United VAN

GIVES YOU A *Helping Hand!*

Yes, your capable UNITED VAN LINES agent *pre-plans* every long-distance move with you and your personnel. Alert, experienced UNITED agents specialize in such careful, personal attention to *all* details . . . an effective Helping Hand for busy Traffic Managers.

UNITED provides efficient, dependable service to and from any point in U.S.A.

For safe, on-schedule long-distance moves, be sure to have UNITED VAN give *you* a *Helping Hand!*

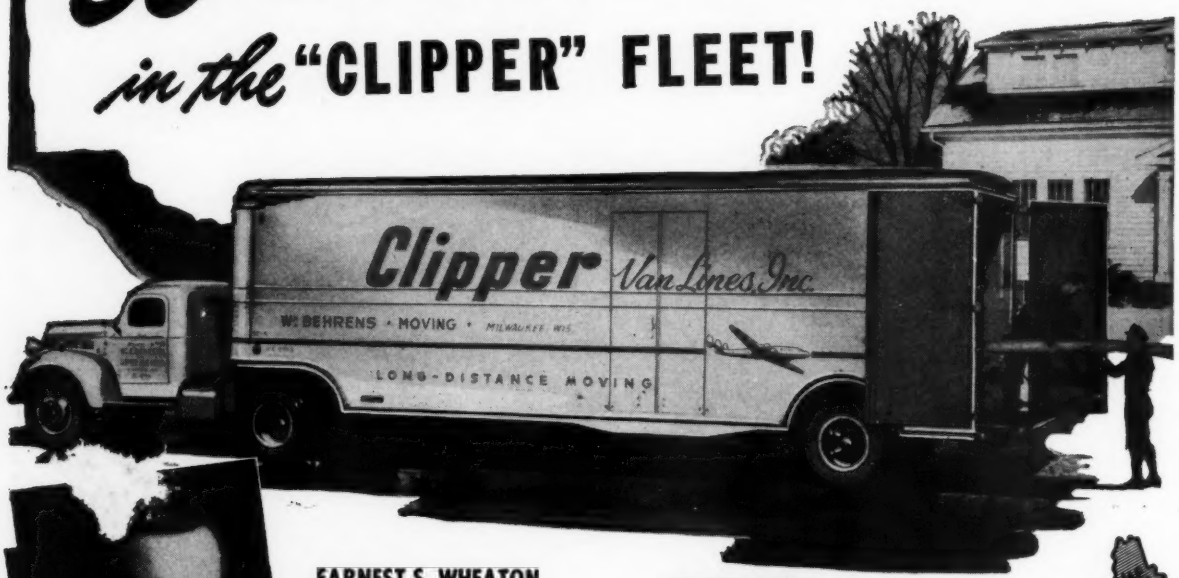
There's an efficient, helpful UNITED agent in *your* city. He is listed in the Classified Section of your Telephone Directory.

United VAN LINES, INC.

MOVING WITH CARE
United
VAN LINES INC.
EVERYWHERE

HEADQUARTERS: ST. LOUIS 12, MO. ★ AGENTS IN PRINCIPAL CITIES OF THE UNITED STATES

55 "TOP FLIGHT" FRUEHAUF VANS in the "CLIPPER" FLEET!



EARNEST S. WHEATON
President
CLIPPER VAN LINES, INC.
INDIANAPOLIS, IND.

THROUGHOUT 22 States and the District of Columbia, you'll find these attractively painted Fruehauf Furniture Vans handling removals for thousands of families.

Working through 250 agents in an area where 70% of the nation's population resides, good looks in the Clipper Vans is an important factor in the solicitation of business.

Fruehauf Furniture Vans have rated in "top position" with Furniture Movers for many years. Fine appearance has been backed with many in-built features which insure goods' arrival in excellent condition — and at low transportation cost. Fruehauf Factory Branch service across the nation keeps equipment rolling and makes scheduling a certainty.

With loads from pillows to pianos, Fruehauf's patented "Multi-Rate" underconstruction provides correct springing — a passenger car ride — through the entire load range.

If you are not familiar with Fruehauf Aerovans money-saving construction features, be sure to let a Fruehauf man show you why 87% of all Furniture Van Trailers built in 1947 were Fruehaufs.

Ask Your Nearest Branch about
FRUEHAUF LOW-COST SUMMER SERVICE SPECIAL

World's Largest Builders of Truck-Trailers
FRUEHAUF TRAILER COMPANY
DETROIT 32 • LOS ANGELES 11
TORONTO (WESTON) ONTARIO
77 Factory Service Branches

FRUEHAUF TRAILERS — FRUEHAUF NATION-WIDE SERVICE — **"ENGINEERED TRANSPORTATION"**

EDITOR'S PAGE

Decentralization

WORLD WAR II tremendously accelerated the clearly defined and growing prewar trend to industry decentralization. It caused, in addition, abnormal changes in industry location, in the geographical distribution of our population and in the location and potential of markets. Many of these population and industry shifts, arising out of the exigencies of our war production program, were transitory in nature. Others, particularly those affecting Southern and Pacific Coast states—so extensive during the war years as to suggest an eventual and serious postwar unemployment problem —still continue.

"The West Coast states," we are told by Lawrence Davies, Pacific Coast correspondent of The New York Times, "have gained four million population since 1940. The impact of the period upon the West Coast economy is as if all the residents of Maine, New Hampshire, Vermont, Connecticut and Delaware were carried off on a magic carpet over the Appalachians, the Great Plains and the Rockies and set down within the geographical limits of California, Oregon and Washington." Psychologically, Mr. Davies adds, the West Coast is proud of being the fastest-growing part of the country. Practically, however, it is not fully ready to absorb the millions more who, judging from the continuing inrush of 15,000 persons a month into California alone, are presumably eyeing the region. Similarly in the South, wartime impetus to industrialization and population growth is changing the social, political and economic pattern and posing many vexing problems.

Here we have abnormal regional shifts into geographical areas broadly defined by prewar trends to decentralization but tremendously intensified by our wartime production needs. They are seriously taxing the facilities and the resources of the areas affected. Ordinarily, as is pointed out elsewhere in this issue, regional shifts, as distinguished from the long-term trend to decentralization, are predicated on the "law of comparative costs." Decentralization on the other hand, is not a migration enforced by the comparative costs of doing business but is voluntarily undertaken for better employer-employe relations and for other causes which do not obtain in regional shifts. Industrialization of the Southern and Pacific Coast states was in the cards; it would have come eventually but over a relatively much longer period. Already it is changing the market map and is vitally affecting the production and distribution of goods. Distribution must recognize this change which is taking place since it directly affects all of the eight basic phases of distribution, i. e., handling and transportation, packing and packaging, warehousing and marketing and service and maintenance. It means changes in promotion and transportation planning and changes in the allocation of effort. Personnel and finances must be reviewed in the light of this postwar opportunity.

Even before the war, the trend to decentralization was well defined; new investment was flowing into the less industralized regions more rapidly relative to the amount of manufacturing already located there than into the highly industralized Northeast. The roots of decentralization extend so deeply into our economic soil that heretofore manifestations of change at the surface have not been easily perceptible.

The article, "Decentralization and Mr. Big," appearing elsewhere in this issue discusses some of the reasons for long-term decentralization. Decentralization, as differentiated from industry dispersion for reasons of national defense or in accordance with the law of "comparative costs," is tending to benefit individual manufacturers and distributors and to balance our overall economy. It is being actively sponsored by economists and government planners. The economists, we are told, are endeavoring to bring about a balanced economy through the "breakup of the eleven northern industrial states where 65 percent of our manufactures are produced today and the spreading around of manufactures in the West and South, which currently accounts for only 20 percent." Following the war, these economists wanted governmental aid, in the form of research and technological assistance, given the West and South to encourage the migration of industry. This aid was advocated on the ground that industry centralization in the Northeast breeds statism, creates cheap money and tends to destroy free enterprise. They point out that 75 percent of our national income tax is paid by the 45 million persons crowding but two percent of our national area, and they emphasize the fact that depressions, when they do come, are felt most acutely in the industrial north because of high living costs.

D. J. Witherspoon

Editor

NEXT MONTH

Topics to be discussed in DISTRIBUTION AGE for June include:

CURRENT PACKING AND PACKAGING TRENDS . . . Management is becoming increasingly conscious of the fact that packing and packaging methods and equipment must be coordinated and integrated with the other distributive phases if the overall cost of distribution is to be reduced . . . Packing techniques affect shipping practices, handling operations and equipment, traffic management, the pay load of carriers, warehousing and most aspects of marketing . . . The subject is discussed by staff experts and leading authorities in the packing and packaging field.

•

PRIVATE BUSINESS FLYING . . . It is becoming more and more apparent that a great deal of flying is done for strictly business purposes, to meet business deadlines. Many firms operate private planes for their personnel, and the CAA reports that 29 percent of non-airline or charter planes in 1946 were business planes. John H. Frederick, aircargo consultant, discusses this important subject.

•

SHIPPERS ADVISORY BOARDS . . . Henry G. Elwell, through the medium of Jack McCormack, the free lance traffic manager, explains the oftenmisunderstood work of the thirteen shippers advisory boards throughout the nation, whose work is invaluable to the shippers and carriers.

•

MODERN PORTS—PHILADELPHIA . . . An important part of Philadelphia's overall city beautification and modernization plan for her Centennial celebration is the expenditure of over 30 million dollars during a six year period to improve its position as "second port of the nation," which in 1946 handled 50,906,086 tons.

•

TRUCK COSTING . . . Many industrialists pay little attention to truck transportation costing, assuming it a negligible expense. Fred Merish, special correspondent, proves that through adequate, though not exhaustive, truck costing, substantial savings can be made in distribution.

LETTERS to the Editor

Laminated Wrappers

Sir:

We are interested in learning of present uses of high-grade laminated wrappers. To further define "high grade lamination," we have in mind laminations including one or more plies of cellophane (or other film) or foil.

The specific information we are looking for is:

1. What types of products are packaged in these protective wrappers?
2. Are such products usually marketed by large or small manufacturers?
3. Does the use of high grade protective laminations appear to be on the increase or decrease?
4. Are these protective wrappers used more extensively in some sections of the country than in others?

—Dorothy Kennedy, Sales Research Dept., Nashua Gummed and Coated Paper Co., Nashua, N. H.

Editor's reply:

(1) Laminated wrappers have in recent years served as pliable "tin cans" holding semi-perishable products such as dehydrated soup mixtures (often with fat), individual portions of soluble coffee, bouillon, vitamin tablets, and a long list of medicinal products, desserts and candies. Further, during the war they were employed as vapor-moisture-grease barriers to protect the smallest machined part from rust and other corrosion to fabricated bags which enveloped an entire motor, machine and even complete vehicles.

(2) Products contained in laminated wrappers are marketed by both large and small manufacturers. Large manufacturers purchase their own bags or other wrappers and operate their own sealing or other closure machines. Smaller packers or brands make use of packaging concerns who specialize in smaller lots and private labels. Chains, jobbers and large department stores will therefore handle the merchandise packed in laminated wrappers of large manufacturers and will secure from a private label packer a similar product, similarly wrapped, under their own name.

(3) Without figures on current production it would be difficult to say if the use is on the increase or decrease. Definitely, constant research is being made by the manufacturers of cellophane, pliofilm, aluminum and lead foil bringing out new uses and new products which can be served by laminated papers. To offset these gains, there were some products which during the shortages of tin, glass and other per container. Some of these remained with their new container, but others have returned to their original package. Also, many exporters—no longer forced by government contract specifications—are falling away from using the excellent protection offered by the laminated wrappers in connection with corrosion control.

(4) Many of the products protected by a laminated wrapper enjoy national distribution so that it would be difficult to credit its use to a greater extent in one part of the country over another, except as sales volume varies with populations and purchasing power.

o o o

ICC Volumes

Sir:

I have read Henry G. Elwell's article in the March issue of DISTRIBUTION AGE with much interest, particularly as he deals with traffic activities with which we are more or less familiar. In his article he refers to certain ICC volumes and references, I would like to know where these may be obtained.

I wish to compliment Mr. Elwell on this article.

—E. M. Stokes, Hayes Freight Lines, Inc., Mattoon, Ill.

Editor's Note:

Although Mr. Elwell was referring to various volumes; we believe the most important, from the viewpoint implied in your letter, are the "Interstate Commerce Acts Annotated" now carried in 12 volumes, but to be supplemented from time to time.

The volumes (1-12, incl.) issued to date, unless out of print, may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. We do not have at hand the current price per volume. However, the cost is nominal and you can ascertain the total charge by writing to the Superintendent of Documents.

o o o

Conveyor Information

Sir:

We have a reprint from the March, 1947 issue of DISTRIBUTION AGE, entitled "Conveyor System Facilitates Terminal Operations" written by Warren E. Crane, pertaining to the Consolidated Freightways at Portland, Ore. We are desirous of having the name of the company that manufactures the Automatic Continuous Overhead Conveyor System tractor-drawn four wheel dollies hooked to overhead electric tractors by chains same as used in grocery warehouses.

—James F. Ervin, Fletcher-Thompson, Inc., Bridgeport, Conn.

Editor's Note:

The overhead system at Consolidated Freightways was furnished by the Link-Belt Co., Pacific Div., 3405 Sixth Ave., So., Seattle, Wash.

INTERNATIONAL POWERED . .

Mobile Cranes for Low-cost Handling of Your Heavy Goods

Here is an International Tractor operated revolving crane that proved its worth during the war and now is speeding materials-handling in shops and on construction locations.

Powered by an International I-9 Wheel Tractor, this mobile crane can pick up and move loads as heavy as 15,000 pounds.

In the illustration it is moving a steel floor plate 38 feet long and 40 inches wide from a stock pile to an assembling location where all-metal freight cars are built. This bulky plate weighs 800 pounds and is handled by automatic clamps hung from the "I" beam.

There are many makes of cranes designed for use with International Tractors, crawler as well as wheel types. Some are tractor-mounted. Others, as in this case, use the basic tractor as power.

We suggest that you check with the International Industrial Power Distributor near you—or distributors of International-powered equipment—on the cranes and other International-powered materials-handling machines now available.

It will pay you to insist on International power when you buy. International engineering and design is your assurance of satisfactory and long-lived performance.

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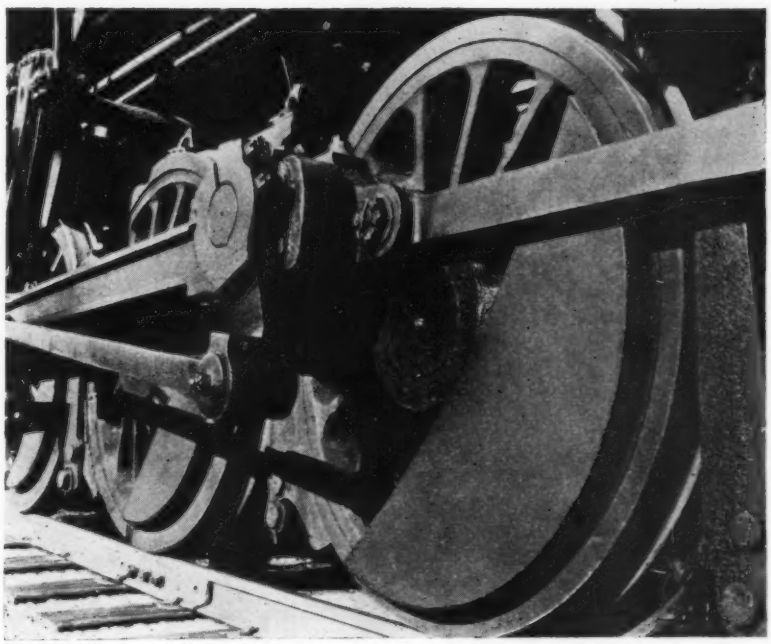
INTERNATIONAL *Industrial* **POWER**

CRAWLER TRACTORS • WHEEL TRACTORS DIESEL ENGINES • POWER UNITS

THE RAILROADS and FREE ENTERPRISE

The railroads, still the backbone of our national transportation system, must be permitted to earn reasonable profits if bankruptcy and government ownership are to be avoided . . . Should the government take over the roads, it means the ultimate breakdown of free enterprise in industry.



By HENRY G. ELWELL
Traffic Consultant

DESPITE the plain fact that motor truck carriers, airplane freight services and other agencies hold a prominent position in the field of transportation, it is still true that the railroads stand as the "backbone of our national transportation system."

Examine a map of the United States. You will see that the earliest settlements were located on waterways. From these settlements highways of sorts to interior points came into being, but comparatively speaking, these were only short distances from tidewater. Later came the canals. Again progress was made, and towns at more distant interior places were established. But the real growth of our country did not take place until the coming of the railroads.

In serving the nation, the railroads are not without fault, past and present. To support that statement, it is not necessary to go into details of financial matters of the past; of the ramifications relating to boards of directors; of reasons why the Interstate Commerce Act was adopted in 1887; of banker interference. Rather let us turn to plain, everyday things for our examples.

For instance, in the movement of less than carload freight shipments, the railroads are woefully behind the times. In the transit time of carload freight from points of origin to points of destination, they are not up to their pre-war and war-period records. Then too, at local points railroads frequently curtail drill engine service without any advance notice to shippers or consignees. These are three illustrations of operating failings of the railroads which are proving costly and irritating to shippers and consignees. If corrections are not soon forthcoming the railroads will find increased competition from other types of transportation which will cut into their revenues even more heavily than in the past.

In directing attention to certain defects in the service of railroads, we have in mind the interests of the shippers which are so closely intertwined with those of the rail carriers. Any curtailment in rail service injures the shippers. On the other hand, we must consider the broader aspects. We must realize that today the railroads of the United States face a critical situation, one bordering on a crisis. To determine the reason we have to look backward over several years.

In the face of protests to the contrary from various groups, the reality remains that when the government relinquished control of the railroads following World

(*Continued on Page* 58)

An address by Mr. Elwell at a meeting of the Rotary Club of Kenilworth, N. J.

Car-Stretching

While the freight car supply is increasing slowly, no substantial improvement is looked for in 1948 . . . In this article, Dr. Wilson outlines a car-stretching program for the roads and shippers.

By G. LLOYD WILSON

THE long-protracted shortage in freight car and motive power supply reached its critical stage during the summer of 1947. The freight car shortage in 1947 was as bad as, or worse than, at any time during World War II or for the twenty years prior to the war. The shortages were due to heavy seasonal crop movements which resulted in shortages of cars of certain types, particularly those suitable for the handling of grain; to the abnormally large shipment of coal to European countries, and to the heavy volume of freight traffic generally.

At times manufacturers were obliged to pile their products awaiting cars instead of loading directly to cars; some farmers could not obtain cars when they were needed, and other producers were handicapped by lack of cars generally and by lack of cars of particular sizes and types.

Despite the shortages a record-breaking peacetime traffic was moved. Several factors relieved what otherwise might have been a much more serious situation. First, there has been an increase of about 25 percent in capacity of new freight cars in comparison with the cars being retired. Improved switching and loading practices by carriers and by industries have increased the efficiency of car use. The declining average age of freight cars has increased the efficiency of the freight car fleet.

During the first quarter of 1947, new freight car production exceeded retirements for the first time since the outbreak of World War II, but for the full year 1947, 63,312 freight cars were put in service, while 71,331 cars were retired, a net reduction of 8,019 cars.

Deliveries of new freight cars to

Publication of Dr. Wilson's discussion of Air Line Tariffs, scheduled for this issue, has been deferred until next month.

Railroads Classified According To Home Districts As Shown On Map

Railroad	District No.
ALTON	8, 11
A.A.	12
A.B.&C.	16, 17, 18, 19
A.C.L.	16, 17, 18, 19
A.C.&Y.	12
A.C.&N.R.	21
A.T.&S.F.	2, 3, 4, 7, 8, 9, 11
A.&W.P.	19
B.A.R.	14
B.&A.	8, 11, 12, 13, 14, 18, 21
B.&M.	14
B.&O.	8, 11, 12, 13, 18
B.&L.E.	13
B.R.I.	9
C.&A.	8, 11
C.A.S.O.	21
C.B.&Q.	3, 6, 7, 8, 11
C.C.C.&St.L.	8, 11, 12, 13, 18, 21
C.C.&O.	15, 16, 17
C.&E.I.	8, 11, 12
C.Ga.	19
C.&G.	18(5)
C.G.W.	6, 8, 11
C.I.&L.	11, 12
C.&I.M.	11
C.M.St.P.&P.	1, 5, 6, 8, 11
C.N.	14(6), 20, 21
C.N.J.	13
C.&N.W.	3, 5, 6, 7, 11
C.&O.	11, 12, 15, 16
C.P.	14(6), 20, 21
C.R.P.	13
C.R.I.&P.	3, 4, 6, 7, 8, 9, 10, 11
C.R.R.	15, 16, 17
C.&S.	3, 4
C.St.P.M.&O.	3, 5, 6, 7, 11
C.T.S.E.	1, 5, 6, 8, 11
C.V.	14
C.&W.C.	17
D.&H.	13
D.L.&W.	13
D.&M.	12
D.M.&I.R.	6(3)
D.&R.G.W.	3
D.S.S.&A.	6(3)
D.&S.L.	3
D.T.&I.	12
D.&T.S.L.	12
D.W.&P.	6(3)
E.J.&E.	11
ERIE	11, 12, 13
F.E.C.	19
F.W.&D.C.	9
Ga.	18
G.B.&W.	6(3)
G.&F.	17, 18
G.M.&O.	8, 10, 11, 15, 18
G.N.	1, 5, 6, 20
G.T.W.	12
I.C.	6, 8, 10, 11, 15, 18
I.G.N.	9
I.T.	8, 11
K.C.S.	7, 8, 9, 10
K.O.&G.	9
L.&A.	9, 10
L.&H.R.	13
L.I.	13
L.&N.	8, 10, 11, 15, 18
L.&N.E.	13
L.S.&I.	6(3)
L.V.	13
M.A.	8, 9, 10
M.E.C.	14
M.C.	8, 11, 12, 13, 18, 21
M.I.W.	1, 5, 6, 8, 11
M. & S. L.	5(2), 6, 11
M.St.P.&S.S.M.	5, 6, 11, 20
M.K.T.	7, 8, 9
M.P.	7, 8, 9, 10
M.S.C.	18(5)
N.&C.	15, 18
N.H.	14
N.J.I.&I.	12
N.O.T.&M.	9, 10
N.de M.	9
N.O.R.	8, 11, 12, 13, 18, 21
N.P.	1, 5, 6, 20
N.K.P.	8, 11, 12, 13
N.S.	16, 17
N.&W.	12, 15, 16
N.W.P.	2
N.Y.C.	8, 11, 12, 13, 18, 21
N.Y.O.&W.	13
N.Y.S.&W.	13
O.N.T.	21
P.R.R.	8, 11, 12, 13, 18
P.&E.	8, 11, 12, 13, 18, 21
P.H.&D.	12
P.&L.E.	12, 13
P.M.	11, 12
P.McK.&Y.	12, 13
P.&S.	13
P.&W.V.	12, 13
Q.C.	21
RUT.	14
RDG.	13
R.F.&P.	16
R.I.	3, 4, 6, 7, 8, 9, 10, 11
S.A.L.	16, 17, 18, 19
S.D.&A.E.	2, 4
S.I.	1
S.L.B.&M.	8, 10
S.L.S.F.	7, 8, 9, 10, 18
S.S.W.	8, 9, 10
SOO	5, 6, 11, 20
SOU.	8, 10, 11, 12, 16, 18, 17, 18, 19
S.P.	1, 2, 3(1), 4, 9
S.P.M.	4
S.P.&S.	1
T.C.	15
T.E.M.	21
T.H.B.	21
T.M.C.	21
T.&N.O.	8, 10
T.&P.	8, 10
T.P.&W.	11, 12
U.C.R.	3
U.P.	1, 2, 3, 7, 8
UTAH	3
VGN.	16
WAB.	6(4), 7, 8, 11, 12
W.mA.	18
W.F.&S.	9
W.&L.E.	12
W.M.	13, 16
W.P.	2, 3(1)
W.S.S.	17

(1)—Loading of Sou. Pac. and Western Pac. cars to District 3 preferably should be confined to Utah.

(2)—Loading of M. & St. L. cars to District 5 preferably should be confined to South Dakota.

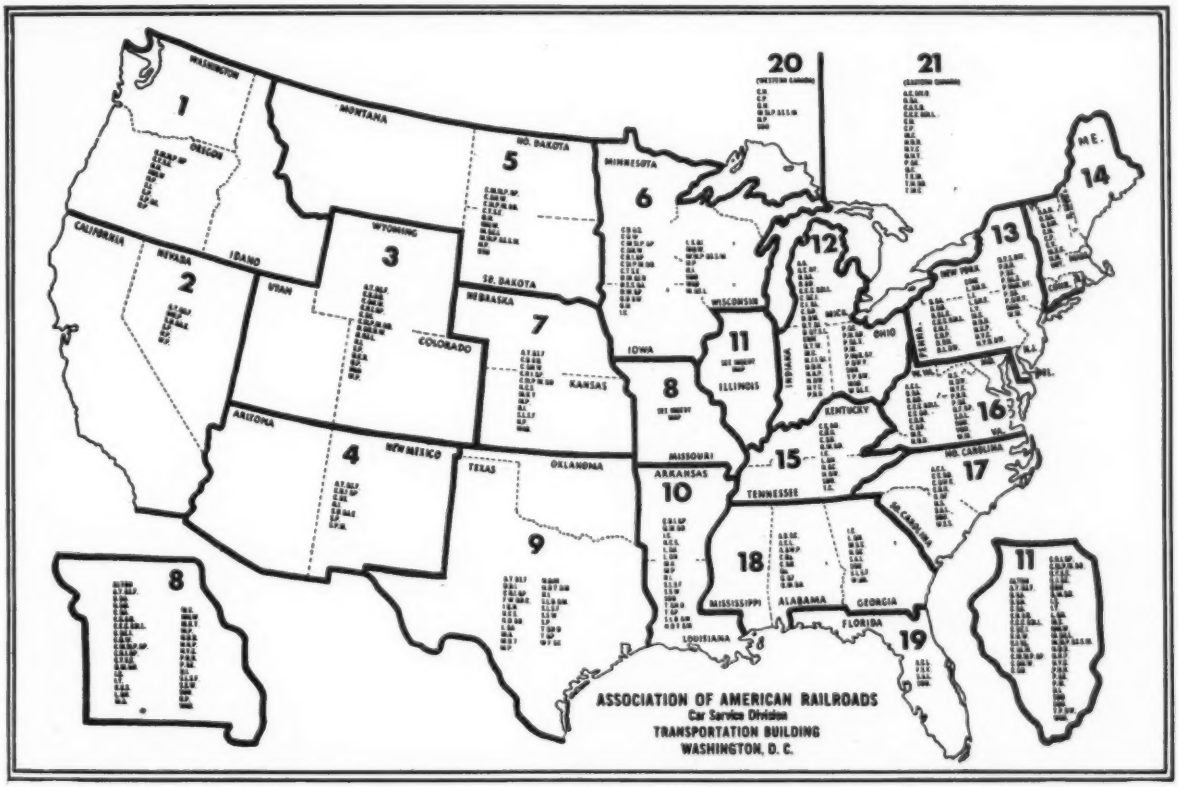
(3)—Loading of D. S. S. & A., D. W. & P., D. M. & I. R., G. B. & W., and L. S. & I. cars to District 6 preferably should exclude Iowa.

(4)—Loading of Wabash cars to District 6 preferably should be confined to Iowa.

(5)—Loading of Columbus & Greenville and Miss. Cent. cars to District 18 preferably should be confined to Mississippi.

(6)—Loading of C. N. and C. P. cars to District 14 preferably should be confined to roads north of N. Y. N. H. & H. R. R.

Revised April 1947.



domestic customers have averaged 9,000 cars per month since November, 1947. A substantial part of this increase is attributable to a marked decline in shipments of freight cars abroad. Car builders turned out 80,000 freight cars during the period in 1947 in which the O.D.T. car building program was in operation. Of this total, 61,000 freight cars were delivered to domestic customers and 19,000 to foreign users.

Despite the general feeling that the freight car shortage will probably be less severe in 1948 than in 1947, the problem is not to be regarded with undue complacence. The peak periods of traffic in 1948 are ahead of shippers and carriers.

Cooperation between shippers and railroads, always essential to good transportation services, is especially important in handling car service problems, if the blights of lost crops, idle industries, and workless workers caused by car shortages are not to do irreparable injury to the economy of the nation and impair the ability to defend it.

The railroads can do much to alleviate the situation by expediting yard switching and placement and line-haul movements so as to increase the car-miles per car-day, and to reduce the average freight car turn-around time. This is the number of days elapsing between loads given to a freight car or the time between each load including the time from placement for loading at the point of origin to release after having been unloaded at destination and placement for the next load. The average turn-around time of all freight cars in January, 1947, was 14.95 days, in February 14.16 days, in March 14.16 days, in April 14.60 days, and in May 13.40 days. In December it was 14.93 days as compared with 15.78 days in December, 1946. In January, 1948, it was 15.53 days.

The turn-around time for all cars is less significant than the same data for freight cars of different types. These data reflect more sensitively differences in types of traffic, types of movements, lengths of the hauls on which the cars are customarily used, and the urgency with which the cars are needed in the services in which they are used. The average turn-around time of cars of different types for representative recent months is shown in Table No. 1.

Table

Average Freight Car Turn-Around Time

By Types of Cars

Type of Freight Cars	Turn-Around Time in Days			
	April, 1947	May, 1947	Dec., 1947	Jan., 1948
Box Cars	12.56 days	13.23 days	13.55 days	14.21 days
Gondola Cars	15.28 "	13.62 "	14.73 "	15.70 "
Hopper Cars (all tpyes)	15.56 "	11.40 "	15.46 "	15.98 "
Tank Cars	15.82 "	15.55 "	14.48 "	14.55 "
Flat Cars	17.85 "	16.45 "	18.16 "	18.99 "
Stock Cars	22.98 "	24.63 "	25.40 "	28.79 "
Refrigerator Cars	23.22 "	23.55 "	24.19 "	22.91 "
All Types	14.60 "	13.40 "	14.93 "	15.53 "

Source: Association of American Railroads, Car Service Division, Washington, D. C., The National Transportation Situation Monthly, and data supplied by Mr. J. F. Duesenberry, District Manager, Association of American Railroads, Car Service Division, Pittsburgh, Pa.

The data in Table No. 1 are for all serviceable freight-carrying cars on the lines of the railroads, including railroad-owned and privately-owned cars. The differences between the average turn-around times of box cars in comparison with all other types; and of box, gondola, hopper and tank cars, in comparison with other types, particularly stock and refrigerator cars are significant of the characteristics of the traffic, movements and lengths of hauls mentioned above.

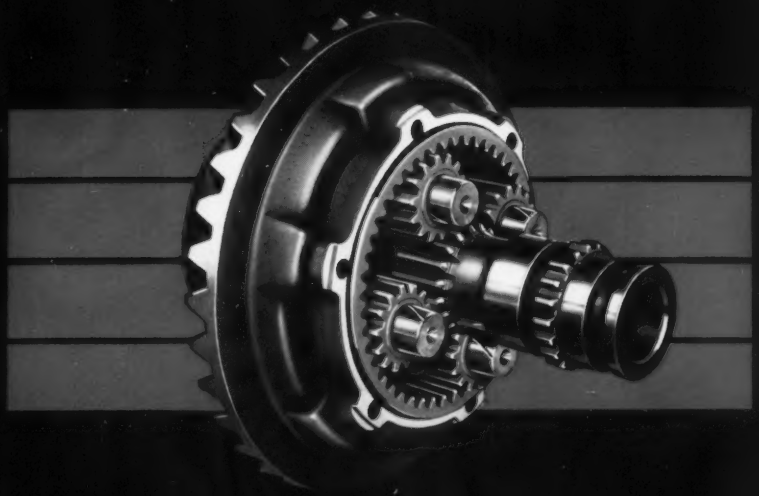
New freight cars are now being installed at the rate of 8,000 cars a month. The actual number installed on Class I Railroads in 1947 was 69,827, an average of 5,800 a month. In January, 1948, 8,240 new cars were installed compared with a total of 2,795 installed in January, 1947. This does not include cars installed by other than Class I Railroads or by private car lines and other than railroad - controlled refrigerator companies, which would increase the number of cars installed in January, 1948, to 8,949 cars. The total number of cars on order on Feb. 1, 1948, was 119,711, of which 33,497 are being constructed in railroad shops and 54,514 in commercial car building shops. On Feb. 1, 1947, a total of 75,578 cars were on order, 21,064 in railroad shops and 54,514 in commercial shops. The present government sponsored car building program of 10,000 cars per month may be even further increased. Col. J. Monroe Johnson, Director, O.D.T., has been actively pushing the car-building program.

Railroads can also assist by expediting the repairs to freight cars so as to decrease the number and percentage of freight cars unserviceable because of bad order. On May 1, 1947, 4.3 percent of all freight cars were idle awaiting repairs, and on June 1, 4.6 percent of all freight cars were idle for the same reason. On Feb. 1, 1948, 3.6 percent of all freight cars were awaiting repairs.

The increase in average speed of freight train movement in the past three years after a three-year decline is an encouraging aspect of freight car supply, because the faster the trains and cars are moved the greater is the amount of freight which can be moved in the same number of cars. In 1939 and 1940 the average speed of freight trains was 16.7 miles per hour. The average fell in 1942 to 15.8 m.p.h. and in 1943 still further to 15.4 m.p.h. In 1944 and 1945 it rose to 15.7 m.p.h. and in 1946 it improved to 16.0 m.p.h.

The installation of motive power as rapidly as it can be acquired and put in service will also assist. The newer, faster and more powerful locomotives can increase the number of freight cars per train and the number of freight car miles per locomotive hour. The average daily mileage of freight

(*Continued on Page* 70)



The Slower Movement of Gears in Eaton Planetary Design Means Quiet Operation, Minimum Wear

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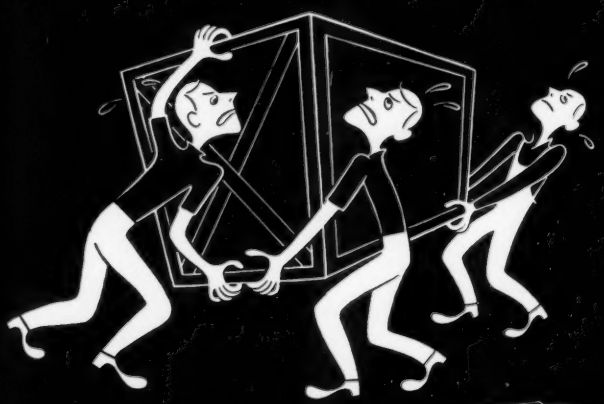
NEARLY A MILLION EATON 2-SPEED AXLES IN TRUCKS TODAY

EATON MANUFACTURING COMPANY

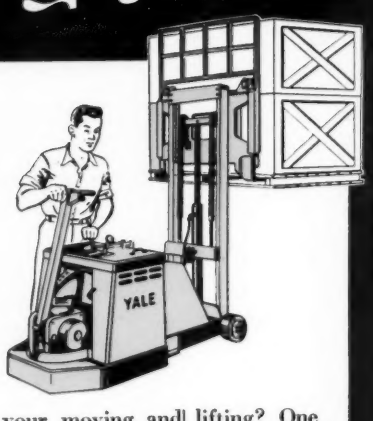
Axle Division

CLEVELAND, OHIO

GET A TRUCK



A YALE TRUCK



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TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

YALE

SCALES
HAND AND ELECTRIC HOISTS
HAND LIFT AND ELECTRIC TRUCKS

"ON THE MOVE" WITH YALE

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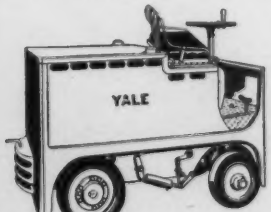
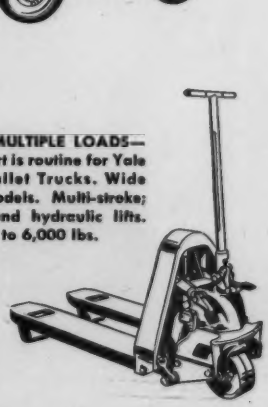


HANDLING MULTIPLE LOADS—with less effort is routine for Yale Hand Lift Pallet Trucks. Wide range of models. Multi-stroke; mechanical and hydraulic lifts. Capacities up to 6,000 lbs.



Handling Equipment Rentals

The use of materials handling equipment on a rental basis poses many problems for manufacturers, distributors and users . . . Mr. Potts discusses some of the basic principles which should govern the formulation of contracts.

By MATTHEW W. POTTS, *Materials Handling Consultant*

THERE is considerable interest today in the use of materials handling equipment on a part-time as well as a full time basis and users frequently are resorting to the leasing of handling units to take care of peak loads. This practice is not new, but some of today's demands are throwing new light on this important phase of materials handling equipment distribution, sales and service, with which neither manufacturers, distributors nor customers are completely conversant.

On practically every major waterfront in the country there are rental organizations, some known as warehousemen, others as stevedores, others as out-and-out rental services on equipment. These may have been in operation over a period of years, and have ironed out details as to rates, insurance, liability and responsibility. In a number of cases they have licensed agreements, and in some instances insist on supplying their own drivers as well as the equipment. Sometimes they actually perform stevedoring operations, supplying labor in addition to the machines. Therefore, with these organizations, most of the factors involved have been given consideration and have been worked out from a legal standpoint, and definite policies have been established. However, this same setup does not apply to every rental operation. We find also that many industrial plants and equipment dealers are not familiar with their responsibility in renting this type of equipment. Risks are being assumed without knowledge.

Therefore a discussion of a few of the contingencies which may arise under usual renting procedures may be helpful to our readers.

To begin with, it is always well to have a signed contract, and this contract should definitely state the following:

All handling and transportation charges to and from the dealer's shop should be paid by lessee.

The cost of maintenance and repair of the machine while in service should be borne by lessee.

Rentals should be based on six days of either eight or 10 hours per day, and extra compensation should be assured for overtime in any day during the six-day week, at a proportional rental per hour.

Rentals should include the day the equipment leaves the dealer's shop and the day it is returned.

Rental for a month or part of a month should be paid on or before the 15th of the month succeeding.

A guarantee for a certain period of rental should be stipulated.

Provision should be made for title to the equipment to remain in the hands of lessor, and it should be stimulated that notice in writing should be given immediately if any levies are placed against the equipment or any seizures threatened.

Definite statements should be made regarding any violation of the agreement. It should be stipulated that lessor can take immediate possession of the equipment in such cases, without becoming liable in any way for damages or trespass and without waiving any claims for rentals due, collections, attorney's fees, damage, injury or expense incurred in returning the equipment to the dealer's shop.

It should be further stated in every instance that lessee agrees to indemnify lessor against all loss, damage, ac-

(*Continued on Page* 42)

PUNCH CARDS
FOR INVENTORY CONTROL

"Perishable, Handle With Care—But Fast!" These are directions that apply in a good many distribution fields—for instance, phonograph records . . . This fast-growing industry must meet such problems as wholesalers' demanding same-day deliveries from inventories which cover thousands of items, including hit tunes with brief life expectancies.

By LEWIS T. BOLGER

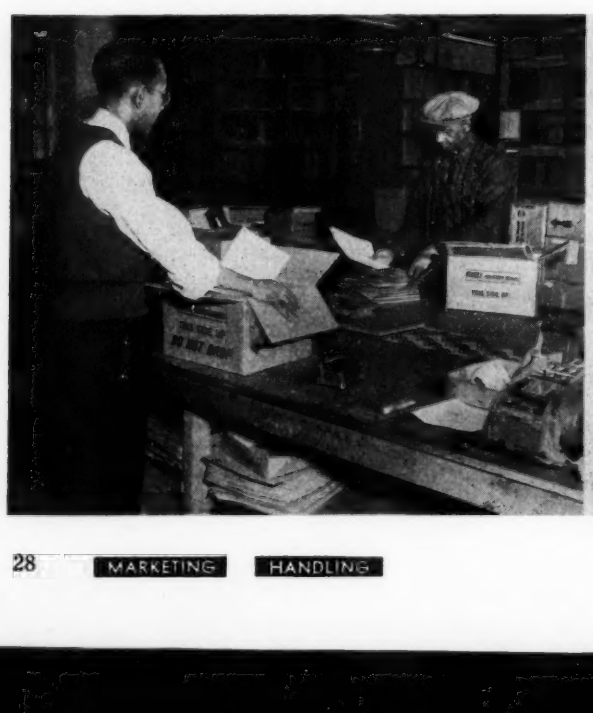
A TABULATING procedure for the wholesale handling of multi-item lines is being adapted to phonograph and phonograph record and accessory distribution. Because much of this merchandise is "perishable"—hit tunes and novelty numbers have brief life spans—handling speed is a major factor, and this has usually meant that when one came along everything else was pushed aside.

To handle the hits, and at the same time give the retailers same-day service on the old standbys, distributors throughout the country are abandoning their unit inventory control systems in favor of the tabulating equipment sales analysis-inventory control procedure.

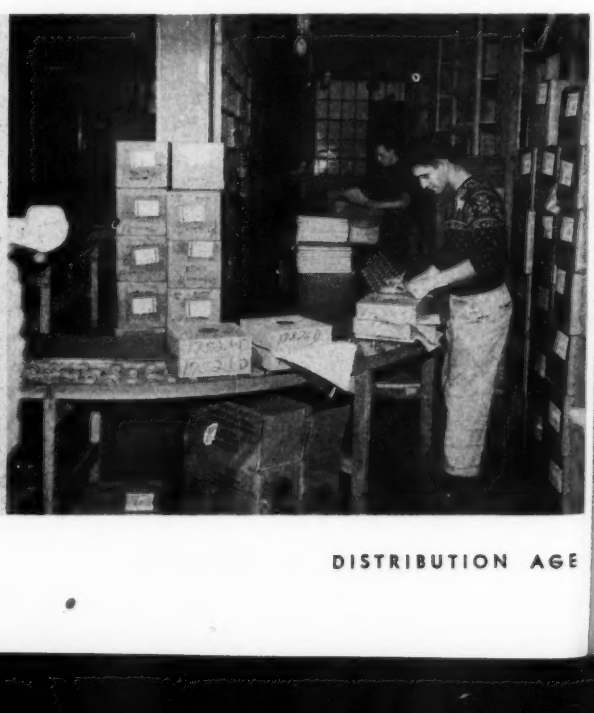
The result of a two-year field study by Columbia Records, Inc. methods engineers, the procedure has been developed by Columbia in co-operation with Remington Rand, Tabulating Machines Division. So satisfactory were the results obtained in a six months "pilot installation" at the offices and warehouse of the record-phonograph-accessory division of Stern & Co., Hartford, that Columbia has recommended the installation and operating procedure to all of the independently-owned radio, record and appliance distributing concerns handling its lines. By April 1 the program was in operation in over 20 of the wholesale outlets.

In addition to the limited-life span of many phonograph records, there is another major factor that led to the Columbia-Remington procedure for basing all distributor office procedure on punched-cards for each dealer order item. The active catalogs of the Big Four in the phonograph record field (Victor, Columbia, Decca and Capitol) each contain many thousands of items. Columbia's right now is better than 9,000—and any of the 49 distributors handling their line have to figure on just

Packers are inserting the combination invoice and checking list with those items ready for shipment only a matter of hours after all retailer customer orders have been received and processed through tabulating machines.



Rearrangement of the Stern & Co. record, accessory and phonograph warehouse so that stock is in numerical code order has made for speed-up of the stock picking and packing operations around this U-shaped conveyor.



By means of this tabulating machine and a simple code system, the punched cards used by Stern & Co. and other Columbia distributors are transcribed into invoices, sales recaps, back order, salesman's commission, packing and other sales analysis or accounting information.

Two of the three machines used in the new procedure being installed by distributors throughout the country are the punched card (left foreground) and high speed automatic sorter (right), in operation at Stern & Co., Hartford.

James Stern, president, James Stern & Co., first to test the new sales analysis-inventory control procedure of Columbia-Remington, holds one of the punch cards around which the system was built.

about every item that is in production, and most of them carry other record lines, particularly accessories, in addition to their radio and appliance lines.

To do all this with efficiency and on an inventory that is sufficiently controlled to permit a 12-time or better turnover rate per annum (which most distributors shoot for in this low markup margin merchandise) accounting procedure has become an increasingly significant factor.

"We operate on a lower margin than a wholesale grocer— and a 'Near You' or 'Civilization' on a shellac disc is just about as fragile as a crate of eggs, and a lot more

(*Continued on Page 72*)

Advantages to Distribution

A manual for the new tabulating procedure, prepared by methods engineer Lee Werblin of Columbia Records, Inc. lists these advantages to distributors:

1. The manual posting and adding (for the recap) of selections ordered by dealers is eliminated.

2. Backorders are merged with current orders mechanically.

3. Invoice, picking list, checking copy, etc., printed and totalled mechanically, and in warehouse sequence for ease of order filling.

4. Backorders filed by selection, providing quick, easy tabulation of quantities.

5. Automatic coding of all sales by each salesman insures accurate commission statements.

6. Automatic coding of all sales within each town and county insures accurate reports to the factory.

7. Procedure makes it possible to withhold bad credit and too-short-to-ship items from the pre-billing list.

8. Sales analysis and other summaries and reports obtained mechanically, with machine speed and accuracy.

9. All listings and reports are neat, uniform and legible and element of human error is reduced to a minimum.

10. Balancing of invoices and shipments to weekly or monthly sales statistics easily reconciled since both (all) originate from the same group of punched cards.

MODERN PORTS

. . . *This Month :* NORFOLK

The new Norfolk and Western Pier "N", costing six million dollars, can load or unload four of the largest freighters at once and store entire cargoes in its huge pier shed . . . Norfolk gives shippers fast, efficient port services and speeds distribution.

NORFOLK, "the northernmost southern port and the southernmost northern port," enjoys the advantages of both and is one of the country's best. Located on famous, spacious Hampton Roads at the mouth of Chesapeake Bay, it enjoys equable climate and is ice-free throughout the year. Several railroads serve Norfolk, and it has the lowest import and export rates to and from the Midwest. It has served for many years as a huge Naval Operating Base, and is well known to merchant seamen of every country.

Norfolk emerged from the war in excellent shape to handle traffic from the many varied maritime, commercial and industrial interests it had served in the past. It could well handle the tremendous amount of freight that had passed through it during the war, and it looked forward to increased activity as a result of America's industrial expansion and widespread resumption of world trade on an even more gigantic scale.

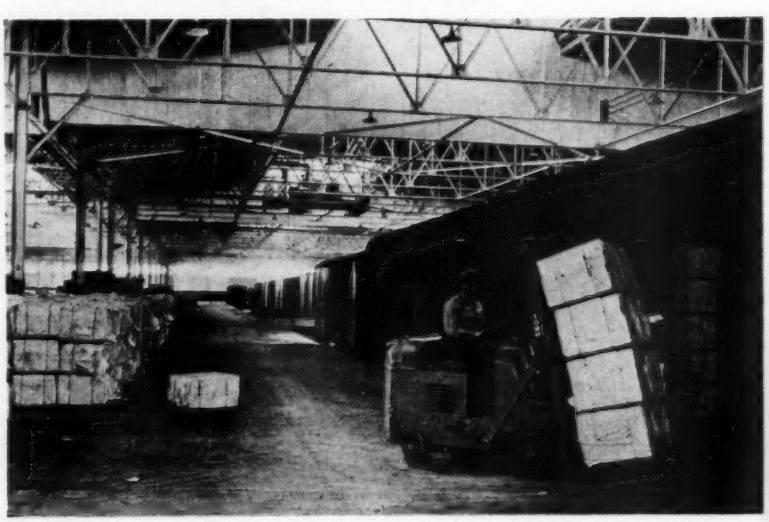
With this expansion of trade and the resultant need for even larger and more modern facilities in mind, the Norfolk and Western Railway, the first road to serve the port, planned and built a huge modern merchandise freight pier at a cost of six million dollars. With this pier, one of the largest and most modern in the world, and with the other excellent facilities of Norfolk Harbor, this port can well boast of her value to this country and the world.

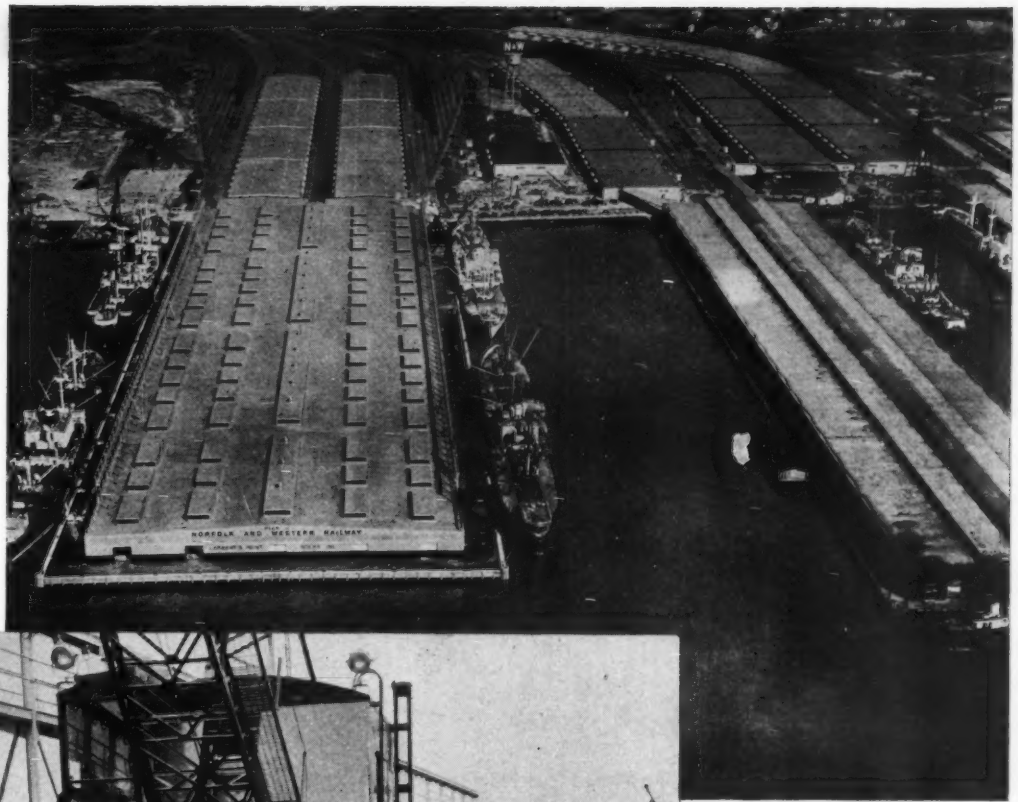
N&W's new Pier "N," on which construction was begun in the spring of 1946, is the largest single-deck pier on the Atlantic seaboard. Designers planned the single-deck construction for smoothness and speed in handling freight in and out. The pier itself, 1,100 by 390 ft., covers an area of approximately 10 acres. The pier shed, 1,050 by 320 ft., is of steel with corrugated steel sides, resting on the concrete pier floor. This shed has about 336,000 sq. ft. of storage space, and can hold the cargoes of four of the largest new type ocean-going freighters, all four of which it can berth and load alongside simultaneously. Fifty-two 14 by 15 ft. electrically operated doors, approximately 50 ft. apart, afford easy and quick access into and out of the shed, and provide for smooth freight handling. A series of ventilated skylights and glass bricks in the shed ends provide adequate natural lighting, and an extensive system of electric illumination is installed. There are 780 lights in Pier "N" alone.

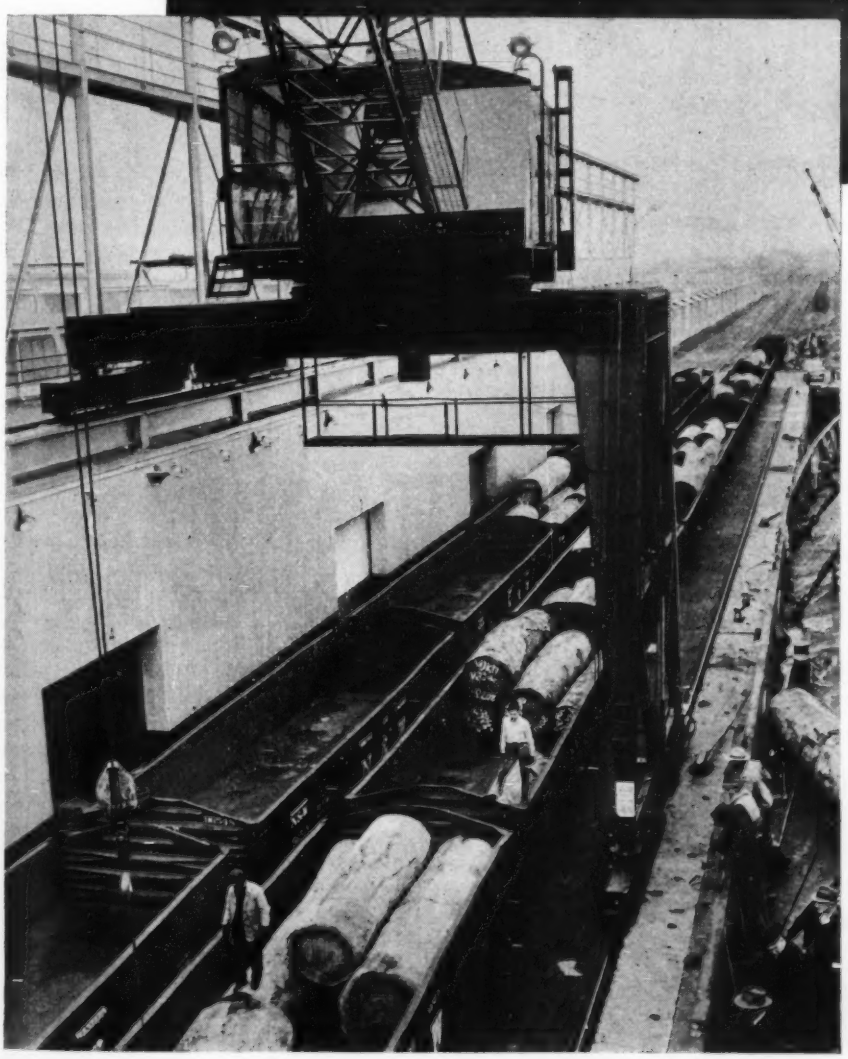
The pier can sustain a load of 1,000 lb. per square foot. At the land end are located two warehouses, 1,000 by 108 ft., which provide approximately 216,000 sq. ft. of more permanent storage for goods which must remain some length of time at this spot. They are connected to the pier shed by 80 ft. covered passages, again

(*Continued on Page* 85)

Modern handling via fork truck in pier shed. Note depressed tracks for maximum speed and efficiency in loading and unloading.

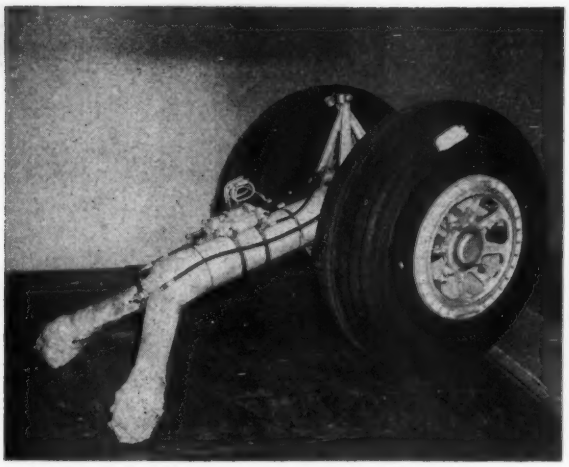






Above: Pier N left, Piers L and S right—Lambert's Point.

Left: Gantry crane handling logs on upstream side of Pier N.



Examples of cocoon packaging of a landing gear assembly, showing initial, partial and final steps left to right.

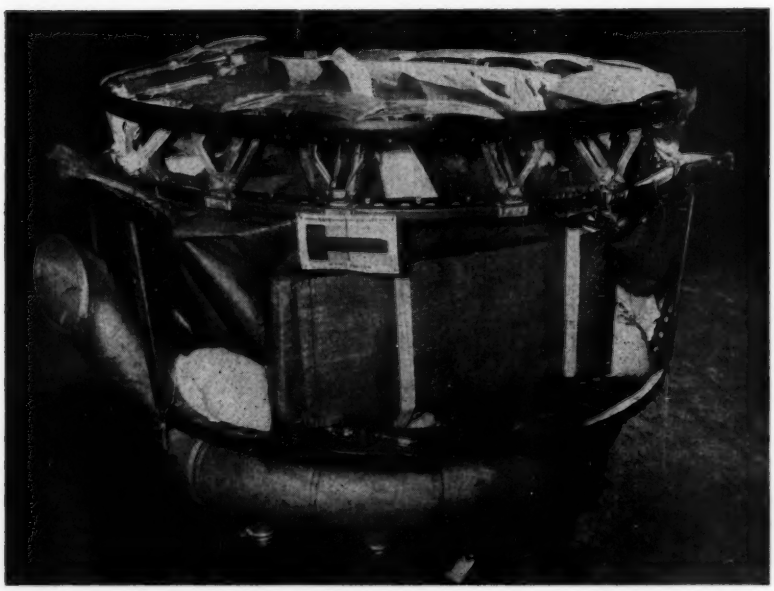
BETTER PACKING

at Lower Cost

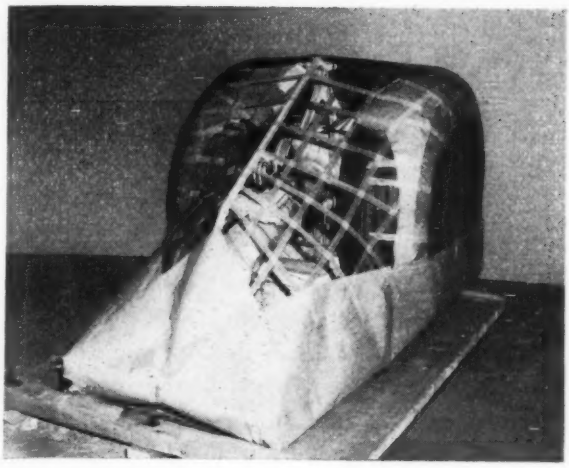
Commercial customers want articles packaged in the cheapest manner consistent with safety from damage . . . The packaging engineer must consider properties of the article to be packed, degree of protection required by customer, means of transportation, and probable exposure to handling and weather.

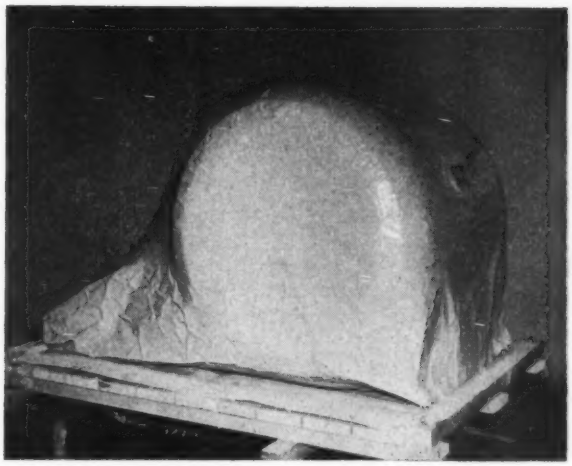
By E. P. TROEGER
Process Engineer
Douglas Aircraft Co., Inc.

Cushioning of power plant accessory sections.



AT Douglas commercial and military shipment of goods is an important activity. During the past five or six years, the vast majority of our shipments have been military, so that one of the major problems we now face is conversion from military requirements to keenly competitive commercial procedures. This is especially true in the selection of containers, in view of the fact that the shipping container, such as a nailed box, a cleated crate, a wirebound box, etc., is the largest single cost item in the preservation of a part during shipping. Military requirements, as exemplified by specifications AN-C-118 and 100-14A, were designed to insure delivery of an article in a usable or standby status to overseas bases





under hazardous conditions. This necessitated a costly packaging and crating procedure, and was justified by the tremendous amount of material formerly received overseas unfit for use and scrapped as junk.

Commercial customers, on the other hand, naturally want their articles packaged and crated so as to prevent damage and insure delivery in good condition, yet in the cheapest manner possible. This means the deletion of the more costly preservation methods and substitution of cheaper procedures. and in many cases no preservative coating at all. It also means the substitution of fiberboard containers for nailed wood or cleated boxes, and the use of open crates in lieu of closed wooden crates wherever possible.

The type of container must be chosen only after an evaluation of the properties of the article to be packed, the degree of protection required by the customer, the means of transportation to be used, and the probable exposure to handling and weather.

Let us first consider the properties of the article to be packed. The finish is a very important factor in modern packaging. In general, the packaging requirements of a particular finish are taken care of by the preservation procedure. Nesting requirements for machined parts call for the use of ethyl cellulose or acetate butyrate dips. The use of open crates is made possible by the use of peelable plastic films. Thus the closed container and protective pads may be eliminated. Open crates were frowned upon for the shipment of critical aircraft parts due to dust pick up by preservative oils and greases, and the discoloration and corrosion of bare surfaces. Parts shipped with peelable films in open crates are rapidly cleaned and made ready for installation. The finish is also important from a blocking and cushioning standpoint. The shipments of parts, such as plastic items with low scratch resistance, deformation and cold flow when improperly supported, and poor heat resistance are real problems to the packaging engineer.

As to the strength factor, the weight of the article to be shipped generally determines the type of container used. Lightweight articles may have a waterproof fiberboard container, heavier ones may have nailed or wirebound boxes, while the heaviest will require crates with reinforcing frame members, struts, braces, joists, and special fastening members.

The shape of the product, together with its strength, determines the basic dimensions and helps ascertain the strength required of the container. If the product is sufficiently strong and sturdy of itself, we can make reductions in the weight and strength of the container. The shape of the article directly affects the number of dimensions of frame members, joists, and internal supports.

To commercial customers, cost is the prime factor. Every effort is made by the customer to reduce to a minimum all packaging procedures. Lightweight containers, open crates, deletion of preservative methods where possible, are continually urged in order to have a low percentage of packaging cost. In many cases, it is really a battle to convince a customer that a $100 packaging charge for a $20,000 item is not excessive on a percentage basis.

The means of transportation to be used, whether freight car, open gondolas, marine transport, air transport or truck, must be considered in order to package properly. Weight and displacement limitations established by carriers can make a packaging engineer look very foolish, if he has not fully considered these in the design of the package and container. Consolidated Freight Regulations are another set of rules which the packaging engineer must be familiar with.

Whether the package is to be handled by crane or by hand must be anticipated, and provision made for center of balance, and for added supports, such as joists to prevent crushing by straps, etc.

(*Continued on Page* 120)

The UNUSUAL is our BUSINESS

The household goods carrier's broad commodity description and operating latitude, together with his versatile equipment and handling methods, enable him to transport many unusual extra-curricular shipments more efficiently and economically than is possible by other means.

By ROBERT F. ODELL

"AND ARTICLES . . . which because of their unusual nature or value require the specialized handling and equipment usually employed in moving household goods." How many times has that definition come to the rescue of the shipping public. How often has the shipper, after trying to obtain transportation via other means, turned in desperation to the moving man and asked him what he could do. All carriers, other than household goods, are fenced in by tariff restrictions—affecting commodities—and operational restrictions—affecting routes and physical equipment. The household goods carriers are not so hampered because of their commodity description and their broad operating authority. They are fortunate in that their vans are versatile as to size and are fully equipped to meet all emergencies. The shipper is the one who gains by this unusual operating latitude and special equipment. Perhaps it is fortunate that traffic managers are not fully cognizant of the household goods carriers' abilities and rights, or these carriers might be swamped with calls for services to the detriment of household goods hauling. Here are some of the unusual hauling jobs which the writer has done and which may give the shipping public a more complete understanding of the capabilities of the household goods carrier.

An orchid grower in an eastern state had a thousand orchid plants in 4-in. pots which were to go to the middle west. These plants were valued at ten dollars each. It was early spring and the weather was very uncertain. Usual shipping methods required the plants to be individually wrapped, put in dog-house cases, about 24 plants to the case, and sent by railway express. The cost of this kind of packing was very high, and there was a possibility that a cold snap might freeze some, or all, of the plants before delivery. How could the grower get them to destination without loss or damage? The answer was the household goods carrier and his equipment. It was easy. The plants were loaded on the floor of a van and between every row of pots a divider of rolled newspaper was placed. At every fifth row a 1-in. by 4-in. board on edge was placed across the van to keep the rows from shifting. The next problem was to keep the plants warm enough to prevent freezing. This, too, was easy. At the ends of the 1-in. by 4-in. dividers, risers, about 1-ft. high, with cross pieces attached, were placed. Over these top cross pieces were tied regular furniture pads. The thousand plants were loaded and the van transformed into a rolling green house, warm enough to keep the plants from freezing. The orchid grower supplied the labor and material for building the frame work to hold the plants in place; all the van driver had to do was to load and unload. The total time consumed in loading was about an hour and a half; unloading took less than an hour. The grower was satisfied to pay a 5,000-lb. minimum for the shipment. The plants traveled 732 miles and arrived in perfect condition. Not a pot was broken or a plant frozen. No other carrier could have maintained this shipment in the condition it was received by the van line.

A tool plant in the middle west was in a very difficult position. It needed a special milling machine which was in one of their branch plants in New Jersey. The manager of this branch plant was notified on a Wednesday that he must get this machine out west by the following Monday morning or an entire operating division would have to shut down. The tool plant was engaged in essential war work and operating 24 hours a day. How could he get this shipment through? He called the carloading companies and the express company and was told that the machine, which weighed only

(*Continued on Page* 52)

AIR CARGO "PICKS UP ITS FEET"

Inefficient ground services slow up air cargo . . . The 20th Century Delivery Service speeds pickup and delivery through better equipment, bookkeeping, routing and general personnel.

By JEROME M. MILLER

Superintendent
20th Century Delivery Service, Inc.

PICTURE, if you will, an Olympic stadium filled to capacity with excited throngs awaiting the start of a relay race. The crowd is tense, craning eagerly forward to view the faultless team work and coordination necessary to insure victory.

The runners crouch low at the starting line. A strained silence settles over the crowd. Suddenly the starter's pistol cracks sharply and the runners leap from their marks.

From the start, one team pulls away from the pack. Their men seem to have matchless precision as they pass the baton without slackening speed or losing the effortless stride. Now the anchor man has the baton and many precious yards on his nearest rival. But wait! To the amazement of the crowd, he has decided not to run after all. He walks toward the finish line as the rival anchor men race past him, their flashing spikes glittering in the sunlight.

Sound silly?

Well, yes. But consider the plight of many shippers using air freight services. Compare the sleek cargo airliners to the fast moving members of the relay team. They have raced his cargo three thousand miles cross country to the drayman anchor man at the airport. But there inertia sets in.

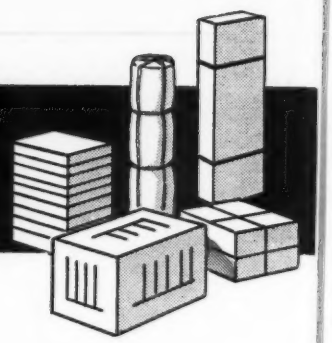
Just as the lazy anchor man nullifies the brilliant precision of his teammates, so does the inept drayman ruin the split second schedules of the airlines. Sometime, deliveries to customers twenty miles from the airport consume a greater length of time than is required by the airlines to move the freight from a point three thousand miles distant.

At the present time, airlines are engaged in an extensive campaign throughout the nation to sell the idea of moving freight by air. All

(*Continued on Page* 53)

20th Century trucks meet every arrival and departure from Los Angeles Municipal, Long Beach and Lockheed airports, thus assuring prompt pickup and delivery of aircargo.

MISCELLANEOUS FREIGHT LOADING



Control systems in miscellaneous freight loading vary widely in different terminals . . . Major Saperstein describes the non-controlled method, the check-off method, the direct tally method and the affixed record method.

By CHARLES L. SAPERSTEIN
Packaging Consultant

A SURVEY of methods of control in loading operations at various freight terminals and other activities concerned with shipping miscellaneous freight shows a wide range in "systems" intended to insure that the right freight is loaded for the intended destination; that no piece is overlooked and that a dependable tally or record accrues for manifest, lading, permanent shipping data, billing or inventory adjustment purposes.

Many of these control procedures have been carefully evolved to meet the exact requirements of a specific operation and dovetail perfectly with the flow of cargo through the incoming movement, its storage as well as when it is actually called forth for loading. Other methods can scarcely be described as a system of control in that they lean entirely upon the ability of the human mind to recognize, keep segregated and move out a lot of goods. Between these two extremes are control plans now being worked, which are subject to possible improvement in achieving either greater efficiency or the same results with less effort and expense.

By miscellaneous freight is usually meant cargo comprising containers of varying sizes and types such as might be found on the loading platform of any l.c.l. freight terminal. For the purpose of the present article, we may broaden the definition to include also freight containers uniform in character but necessary to move by shipping case number.

In other words, with bulk commodities, standard case loads and other units of freight alike in character and bearing no distinguishing unit markings, a minimum of recorded control is involved other than total weight, number of packed units and sometimes cubic dimensions. Straight loading does involve all of the problems of planning the load to best fit within the rail car or highway trailer that is offered for loading, of securing the load to safeguard itself and if necessary, final bracing or shoring. But the problems of straight commodity loading are light when compared to the detail, supervision and checking in and out expense of miscellaneous freight.

The non-controlled system of loading miscellaneous freight implies one in which no piece-by-piece record is made of freight being loaded by a checker at car door or tailboard. Such methods of loading are usually found at loading points accustomed to assembling materials for given destinations or re-distribution points. There is either daily forwarding of such shipments or goods are permitted to accumulate until it is apparent there is one or more carloads or truckloads.

To illustrate, let us assume the shipper is in Chicago. There is earmarked a section of the transient goods warehouse, marked "Kansas City." As the experienced eye of the man responsible

The efficient handling of miscellaneous freight can be expedited by use of the right control plan.

for cargo movement, or else the accumulated open tickets marked "Kansas City" in the traffic office indicate there is a full load, the loading order is given and everything in that section is loaded out. Waybills are prepared on strength of the open Kansas City receiving tallies, which, if no errors have crept in, should parallel the goods in such section.

The non-controlled method of handling outgoing freight is hazardous, and it is doubtful if the economies in avoiding a detailed outgoing check are not more than offset by claims, losses, tracers and complaints from one's trade. Cargo does become shunted around from one section to another; occasionally the freight handler drops his fork lift truck or hand truck load in a completely wrong section; checking out does sometimes reveal cargo that was never checked in, and finally, sometimes cargo changes its character in the shipping warehouse. An item described as in a "bale" is ripped and the contents are placed in a wooden case by the cooperer. Or a single shipping unit comes apart to form two or more shipping units. There are so many possibilities for mishaps, errors and cargo to go astray that it is safe to assume a physical check of outgoing miscellaneous freight is almost a requisite in any loading procedure.

Many control systems are based on some variation of a check-off record. In such systems, the chief loader is given a copy of the manifest showing the freight that is intended to move forth in a given load. Perhaps another copy of the manifest goes to one or more warehousemen who must select just the freight called for and send it to the loading platform. Each piece of freight as loaded into the carrier is located on the list and circled or otherwise checked to indicate having been loaded. The list is then returned to the shipping office, with notation of car or truck number, date and time of loading. The bill-of-lading, if required, or other shipping information, is then prepared to cover the checked off items.

There are advantages and disadvantages to the check-off system and it depends upon the requirements of the activity before deciding it is suitable for adoption. It has the advantage of the load being decided for the warehousemen and freight handlers in advance based upon the needs governing the movement, rather than being loaded by chance as it comes down to the loading platform. Since the loading list is prepared from incoming records, it can call for the oldest freight out first or urgent shipments can be given priority. Since the prepared list is based on earlier records, the outgoing checker is able to spot immediately where there is a discrepancy in case markings. The greatest advantage, however, is that the check-off system lends itself to the growing use of business machines in shipping control. Where inventory of cargo is punched on individual business machine index cards, cards representing an outgoing load can be immediately run off on check lists for use by warehousemen, carloaders, traffic department and others.

The disadvantages of a check-off system are evident when the load runs to many hundreds of small pieces. The checker spends more time trying to locate each item on his lists than it would take to write down the details. Freight seldom comes to the loading platform in the sequence of a previously prepared list and reconciling the cargo to the list can result in wasted moments with everyone standing around. Another disadvantage is that there is only one safe way of planning a load of freight in miscellaneous sizes. That is from a visual observation of the cargo itself. A previously-prepared list of what should constitute a load is often impractical when one is faced with the assortment to be stowed. Even though the items on the list roughly parallel the weight and cubic capacity of the freight car or trailer, one shipment will go out with valuable loading space to spare; another will be unable to accommodate all of the freight called for. Miscellaneous freight stowage is tricky to pre-judge. Further, carrier's equipment will vary—perhaps only an inch or so more or less in width, height or length—but just enough to throw out one whole tier of freight or to permit much more.

The direct tally method of checking out miscellaneous freight —perhaps first borrowed from stevedoring operations—is still in vogue in many operations. It is laborious, slows down loading time slightly and increases checking costs considerably. However, it offers a bona fide, signed record to cover all outgoing freight and where it is sometimes necessary to offer legal evidence of having released responsibility of certain freight to a carrier, many shippers prefer the directness of a signed tally-out, prepared as the load went into the car or van.

There are also several systems which are based upon affixing a record of some sort to each piece of freight itself. This record remains on the freight while in storage and is pulled only as loaded into the carrier. The records constituting a load are then forwarded to the transportation office for report of what has been loaded and for purposes of preparing necessary shipping documents and billing.

This record may be a carbon of the incoming tally, it may be a case card giving details of contents, size, and if a terminal operation, information as to shipper and ultimate consignee. Or the record to be affixed to the case may only be a card with a warehouse control number, which is detached by the freight loader and sent to the office as the record of what went into the car. Depending upon the requirements of the operation, the case cards can be perforated into two, three and even four parts. One part is stapled securely to the container with one part detached by the receiving platform checker to accompany his tally of incoming freight. A second part may be detached by the warehouse section ultimately receiving and holding the piece of freight as his location report, and finally, a section is detached by the loading section when the freight moves out. With the same

(*Continued on Page* 120)

AIR TRANSPORTATION DEVELOPMENT

In this article, Dr. Frederick discusses some of the more recent technological developments which promise safer and more efficient air transportation.

By JOHN H. FREDERICK

Air Cargo Consultant

WHENEVER a new means of transportation develops, a safety problem arises. This was so with the railroads and with the automobile, and it is true of the airplane. Steady progress in improving safety is always made but it must be realized that any moving object is a potential accident. It is not surprising, therefore, that we have railroad wrecks, automobile smash-ups and aircraft crashes, and that we always will. In air transport in particular, some conditions are obviously safe, some are obviously dangerous. Between the outside limits of safety and danger in flight lies a wide borderline area of dubiety, and while new devices, new techniques, new operating procedures and new type planes can narrow this borderline area, they will never eliminate it entirely.

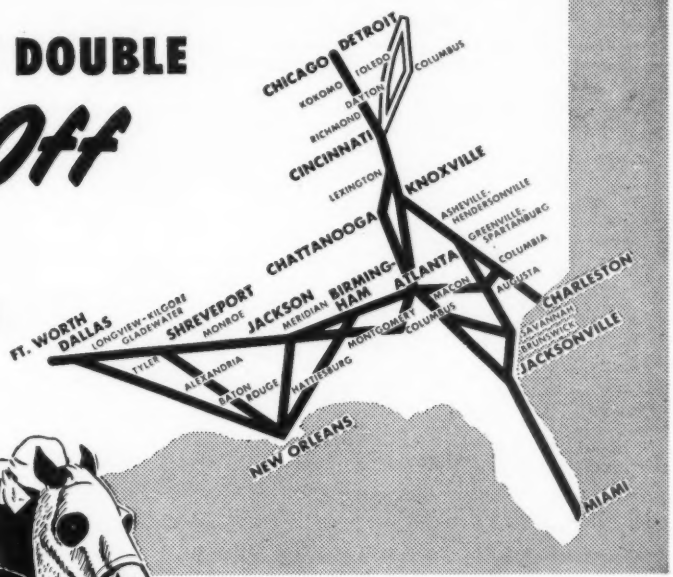
Few people seem to realize it, but the value we place on life in relation to the danger to which we are willing to expose it is a variable quantity. Consciously or unconsciously we seem willing to sacrifice safety to economic advantage or to other personal gains, such as the satisfaction of vanity, increased pleasure, or just because we do not think or care. This is shown in numerous ways. Thousands of us every day place ourselves in jeopardy by crossing busy streets against traffic lights; many housewives insist on placing small rugs on slippery floors; many of us are guilty of fast driving; and a lot of younger people participate in football and skiing, even though both sports have strong elements of danger. Though statistics show that we are safer on a train than in an airplane, or even than at home, most of us will travel by air at times, and none of us is willing to live permanently on a train just for the sake of safety.

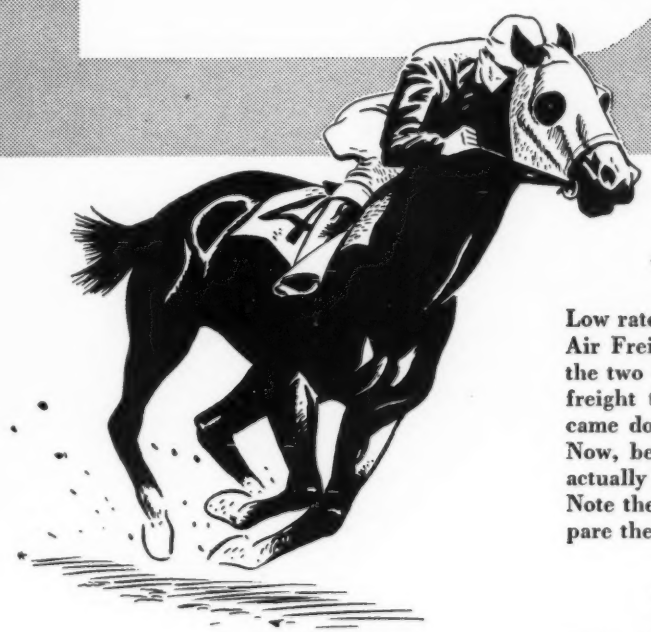
(*Continued on Page* 51)

DELTA'S DAILY DOUBLE

Pays Off

on Air Freight to and thru the South





Low Rates

Low rates are the first of two sure bets on Delta Air Freight. For this is what has happened in the two years since Deltaliners began flying fast freight to and through the South. Delta rates came down, while surface rates were going up. Now, between many points, Delta's air rate is actually lower than the first class surface tariff. Note the typical air rates listed here, then compare them with other costs.

Dependability

Dependability is the second sure thing in this daily double. All Deltaliners, including the all-cargo "Flying Freighters," are equipped with ILS—the instrument landing system to maintain schedules in all weather. And all Deltaliners fly on fixed schedules. Passenger flights or all-cargo planes—they fly by dependable schedules instead of waiting for a full plane load.

Delta Air Freight Rates
per 100 pounds between:

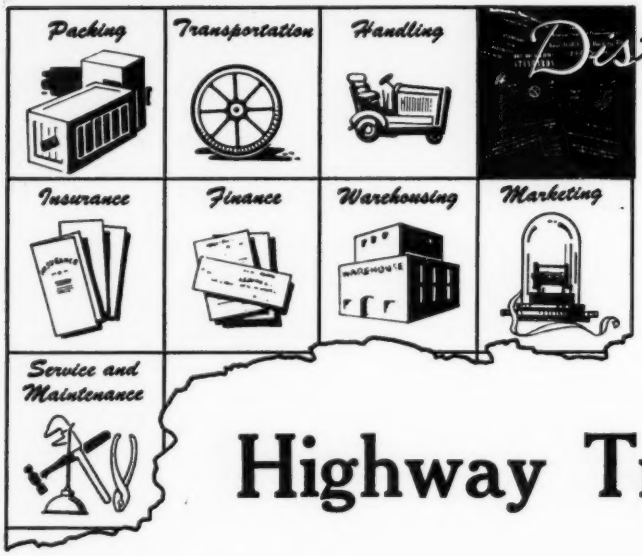
Chicago-Cincinnati	$3.07
Cincinnati-Atlanta	4.55
Atlanta-Chicago	6.55
Dallas-New Orleans	5.05
Cincinnati-New Orleans	8.00
Chicago-New Orleans	8.95
Fort Worth-Atlanta	8.00
New Orleans-Atlanta	5.05

Delta Air Freight Takes
A Load Off Your Mind

Delta AIR LINES

Write or phone any Delta office for complete rates and surface cost comparisons, plus a new folder describing Air Freight details and uses.

General Offices: Atlanta, Ga.



Distribution STANDARDS and SPECIFICATIONS

Highway Transportation

Standards enter into the truck transportation picture in two ways: self-imposed standards and those embodied in state highway laws . . . Progress toward truck standardization is difficult without standardizing to some degree conflicting state vehicle laws.

By BENJAMIN MELNITSKY

THE over-the-highway motor truck is an object of both voluntary and regulatory standards. Since motor trucking is at all times in competition with other means of transportation, there has been within the industry a force leading to greater competitive efficiency through self-imposed standards.

Because the well-being of the nation depends to a large extent on the reliability of this mode of transportation, the federal government as well as state and municipal governments have imposed on the industry a welter of standards which are embodied in the many laws and codes regulating inter- and intra-state commerce. There is considerable logic in talking of these laws in terms of standards since law must of necessity be based on established norms for the guidance of those subject to its provisions. In effect, the establishment of norms means the development of standards. Hence, in this discussion many laws will be considered as standards and discussed accordingly.

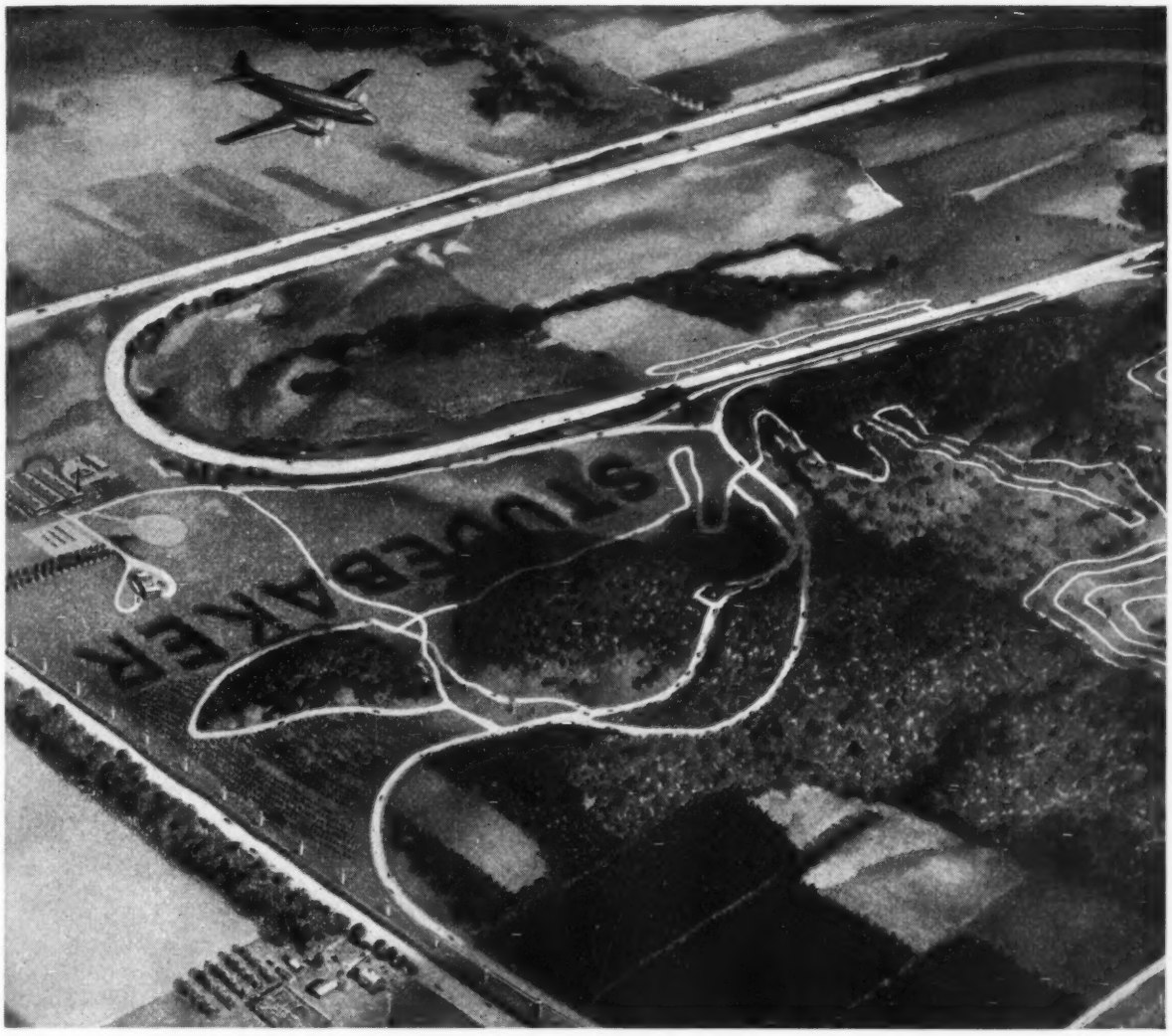
The more than five million motor trucks operating along the country's highways help feed and sustain the nation. In Los Angeles, for example, 92 percent of the city's eggs and 81 percent of its fresh fruit and vegetables are carried by truck. It is estimated that more than half the livestock and farm produce are delivered to market by trucks. Because so vital and large a part of the U. S. economy is dependent on the motor vehicle, the nation, through its various organs of government, has seen fit to safeguard its interests by the imposition of non-voluntary standards. The effectiveness and even the wisdom of such standards are open to debate: indeed, there may be better and wiser means for providing this necessary protection; however, the national interests which underlie these standards cannot be denied.

Thus, in considering standards for highway transportation, we are faced with the duality of (1) standards that are self-imposed and (2) those that are embodied in the law of the land. Both are of equal pertinence in this discussion.

Needless to say, the motor truck is by no means the ideal standards object. The shift pattern, which for passenger cars was standardized back in the '30's, is for trucks far from standard. This is especially true of larger vehicles where the varieties and locations of the different forward and reverse gear shifts is almost beyond comprehension. Component parts of the motor truck are by no means all standard. For example, there are more than 1,000 different sizes and types of brake linings where, according to reliable estimates, a dozen should be more than adequate for all needs. The number and variety of truck and trailer models is tremendous despite the obvious advantages of having a few standard types. One large trailer company alone produces 6,000 *standard* models: the average truck manufacturer will advertise virtually thousands of different *standard* models, sizes, and types.

When we examine the standards

(*Continued on Page* 44)



Landmark from the sky... mystery from the highway!

It's Studebaker's amazing 800-acre proving ground. Right now, the postwar world's most advanced new motor trucks are going through their final testing here.

You could drive by or fly over these lush-looking acres a hundred times and never dream they've meant anything special to you.

Yet, many of the improvements we enjoy in cars, a long list of the most important advancements that have been made in trucks, were first developed and perfected right here.

Very soon now, a sensational new line of fine Studebaker trucks—the most extraordinary transport vehicles that ever wheeled a load—will add new luster to the far-famed achievements of this mammoth outdoor testing laboratory.

Outstanding in appearance, unchallenged in performance and operating economy, these pacemaking new trucks will complete another step in a Studebaker program of transportation progress that has already given the world its first real postwar cars.

Men who speak with authority on trucks have long given Studebaker top rating for truck engineering and craftsmanship. These new Studebaker vehicles will more than justify that opinion.

They will be trucks solid and sound with six long years of pre-testing—honor graduates of the same historic Studebaker proving ground where the Army Ordnance Department brought to perfection many of the most important new military vehicles of World War II.

Studebaker

BUILDER OF TRUCKS YOU CAN TRUST

(*Continued from Page 27*)

cident, expense and penalty arising from any personal injury or damage to property occasioned by the rented equipment or its operation, handling or transportation during the rental period.

This is about as simple a contract as can be written, but there are risks involved by the lessor unless he is definitely given policy endorsements or insurance policies covering his particular piece of equipment, because the agreement to indemnify and "save harmless" is one thing, but if the lessee has not complied with this term of the contract, then the lessor may find himself liable and responsible whether he has a signed rental contract or not.

It is most difficult to make all these points clear to the lessee and his management, and many of these risks are overlooked. In 90 percent of the cases, probably nothing happens; however, in the remaining 10 percent, considerable loss may be incurred.

One way to obviate some of these risks to the lessor is to make a purchase rental contract, in which the lessee places a definite purchase order as if he were buying the machine outright, agreeing to pay for it on a monthly basis, similar to a conditional bill of sales contract. Under this purchase rental contract, the machine is billed at its full purchase price, with the understanding that the lessee will pay for it on a monthly basis, and at any time within a stated period can either exercise his option to purchase or notify the lessor that the machine will not be purchased and will be returned within a certain period.

In the case of used or rebuilt machines, this is all that is necessary. In this way the lessee assumes all the liability for insurance and for other costs and risks, since he has practically signed a conditional bill of sale.

In other instances, some lessors are endeavoring to rent new machines, somewhat similarly to the way trucks are rented. Then it is necessary for the lessor to have a margin of profit over and above the purchase price. This type of sales or rental contract generally calls for the purchase of the machine by a formal order. The full price of the machine is stipulated and lessee must pay freight on delivery and the amount of rental per month over various periods (such as one to 24 months, 24 to 36 months, and a rental after 36 months); and the lessee may have the option to purchase any unit after he has paid rent on it for not less than, usually, 24 months.

If at that time he desires to purchase the unit outright, he usually has to pay, in addition to the rental, a stipulated amount for the machine, even though the rental on a 24-month period has paid the full purchase price. Under this type of contract, it is also agreed by the lessee that he will maintenance the machine and will indemnify the lessor for fire, theft, damage, etc. The lessee assumes all liability connected with the operation of the unit; but the lessor agrees also that if at the end of the 24-month period the lessee does not want to continue renting this same machine at a lower rental, then he, the lessor, will place a new machine in the lessee's plant on a new contract, the old machine being returned to the lessor as his unit.

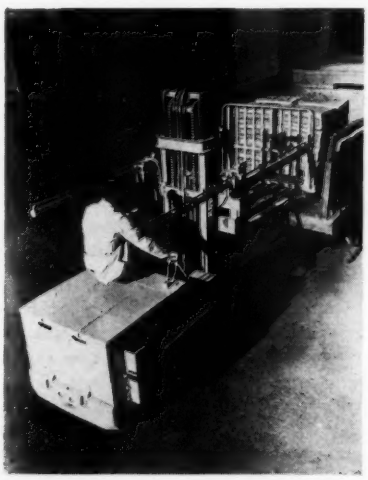
However, if the lessee continues to rent the old machine which is in his plant, then the monthly rental is reduced as agreed in the original contract.

All these arrangements have been worked out in various locations, and under certain circumstances have been found satisfactory. They have been modified to fit particular situations, on both new and used equipment. No doubt this practice will continue, and may expand. It is an adaptation of the contractor equipment rental system which has long been in use on bulldozers, scrapers, concrete mixers, etc.; but this particular setup has been possible because the contractor's equipment has been sold through a distributor and not by direct factory representation or manufacturer's representatives. Whether or not this idea will take hold with materials handling equipment manufacturers is a question that remains to be answered. Some of the distributors who are selling handling equipment have already started to use these methods, because they are handling construction machinery as well as industrial equipment. It is therefore a logical move for them to rent materials handling equipment.

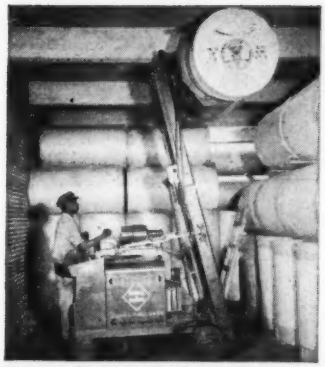
Also, some second-hand equipment dealers are finding this rental method a means of moving used machines to users who cannot afford a large initial investment.

Since DISTRIBUTION AGE is always exploring the field of materials handling, the author would value letters from readers, stating any experiences they have had, good or bad, in connection with the rental of materials handling units. If they see any risks which have not been stated in this article, the writer would like to have them called to his attention, with a view to the possible preparation of an additional article on the subject.

Pusher



Pusher device for Clark fork trucks removes load as a unit rather than piece by piece. Adapted to handling without pallets or where pallets must be removed, the pusher travels hydraulically 55½ in. in two slide channels, making a smooth even ride.



ELWELL-PARKER PAPER LIFT TRUCK

ELWELL-PARKER FORK TRUCK

Battery Electric Trucks and EXIDE-IRONCLAD BATTERIES

Speed production . . . cut material handling costs

There are no material handling problems . . . and no bottlenecks . . . where time-saving, cost-cutting Battery Electric Trucks are on the job. Freight cars and trucks are more quickly loaded and unloaded. Goods in process move quietly and smoothly through the plant. Finished products are hauled safely to warehouse and tiered ceiling high.

Battery Electric Trucks lift, haul and stack loads of every kind and size. They assure smooth starting, powerful acceleration, accurate spotting and easy control. They withstand years of use and abuse . . . over 90% of those sold in the past 20 years are still in service. And the husky, Exide-Ironclad Batteries that give them power provide dependable full-shift performance, with long life and ease of maintenance.

Improve your material handling operations. Start Battery Electric Trucks and Exide-Ironclad Batteries working and saving for you.

Write for further particulars and FREE copy of Exide-Ironclad Topics, which covers latest developments in material handling and shows actual case histories.

DEPENDABLE POWER

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

HIGHWAY STANDARDS

(*Continued from Page* 40)

embodied in government regulations, their complexity and confusion are enough to lead one to doubt the advisability of using the word standard. The accompanying charts describe, far better than can words, the amazing mass and mess of state standards governing motor trucks and truck trailers. It seems as though all governing bodies from the town meeting up to the Congress are imbued with an inner fire which forces them to issue regulations and rulings governing motor trucks and their operation.

As in all else, there are two sides to the coin of standards for highway transportation . . . the glittering side and the illegible, corroded one. However, all coins, no matter what their condition, are negotiable and do have value. The same applies to standards for motor trucks. Confused and confusing as they may be, faulty and annoying as they so often are, the forces of standardization are vital ones and valuable to all who are concerned with the motor truck phase of distribution.

Starting at the very beginning with the vehicle itself, we can see that the Society of Automotive Engineers, as implied by its name, is a group composed of engineers in the automobile, motor truck, motor boat, motor bus, and aircraft industries. SAE, then called the Society of Automobile Engineers, was founded in 1904 and commenced its standards activities in 1910. Six years later it merged with the Society of Aeronautical Engineers; in the same year it assumed the engineering and standardization work of both the National Assn. of Engine & Boat Manufacturers and the National Gas Engine Assn. With this broadening of activity, the present name of the organization was adopted in 1917. Standards work within SAE is carried on by technical committees charged with spe-

(*Continued on Page* 74)

CHECK LIST OF STANDARDS FOR MOTOR TRUCK TRANSPORTATION

Society of Automotive Engineers, Inc., 29 W. 39 St., New York 18, N. Y.

"SAE Handbook" (published annually) $5.00 to members, $10.00 to non-members

SAE BOOKLETS:—Reprinted from Handbook (prices listed are for non-members: members pay half-price)

SP 32	"Rubber Compounds, Hoses, Brake Cups and Brake Fluids"	$2.00
SP 33	"Storage Batteries"	$1.50
SP 34	"Lighting Equipment and Photometric Tests"	$1.50
SP 35	"Splines and Serrations"	$2.00
SP 36	"Screw Threads Manual"	$4.00
	"Motor Vehicle Fleet Operating Cost Classification"	$1.00
	"Motor Vehicle Lubrication Data Form"	$ .10

The Tire & Rim Assn., Inc., 2001 First-Central Tower, Akron 8, Ohio.

"1947-1948 Year Book" — $3.00

American Assn. of State Highway Officials, 1220 Nat. Press Bldg., Washington 4, D. C.

Write for free price list of standards which deal with the construction and building of highways.

Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago 11, Illinois.

275 (d)	"Determination of Fire Hazards of Commercial Cars & Motor Trucks"	Free
919	"Directional Signals for Automotive Vehicles"	Free
912	"Highway Emergency Signals"	Free
	"List of Inspected Appliances Relating to . . . Automotive Equipment" contains listing of equipments which conform to Underwriters' safety standards	Free

National Safety Council, 20 North Wacker Drive, Chicago 6, Illinois.

D-2	"Selecting Commercial Drivers"	$0.35
D-3	"Training Commercial Drivers"	$0.35
D-4	"Commercial Vehicle Accident Record"	$0.35
D-5	"Preventing Vehicle Accidents"	$0.35
D-6	"Garages and Repair Shops"	$0.35

National Conservation Bureau, 60 John Street, New York 7, New York.

I-105	"Safe Operation of Motor Vehicles Transporting Liquefied Petroleum Gases"	$5.00 per 100
I-116	"Safe Use of Liquefied Petroleum as a Fuel for Automotive Vehicles"	$5.00 per 100
CV-1	"Truck and Bus Drivers Rule Book"	$4.00 per 100
I-115	"Safe Motor Vehicles and Equipment for Transporting Liquefied Petroleum Gas"	$5.00 per 100
CV-3	"Commercial Vehicle Driver's Rule Book"	$3.00 per 100
A3	"Personal Factor in Safe Operation of Motor Vehicles"	$0.75

Manufacturing Chemists' Assn. of the U. S., 608 Woodward Bldg., Washington 5, D. C.

Write for free price list on standards for handling, shipping, and packaging of various chemical products.

National Fire Protection Assn., 60 Batterymarch St., Boston 10, Mass.

L1.	"Tank Trucks and Trailer for the Transportation of Flammable Liquids, Regulating the Construction and Operation of"	$0.10
E6b	"Gasoline Transport Truck Fires"	$0.10
E12b	"Tank Truck Fire Record"	$0.25
G31	"Put That Fire Out. Folder on Extinguishers"	$2.00 per 100

American Standards Assn., 70 East 45th Street, New York 17, N. Y.

Z26.1-1938	"Safety Code for Safety Glass for Glazing Motor Vehicles Operating on Land Highways"	$0.35
D7.1-1941	"Inspection Requirements for Motor Vehicles"	$0.35

American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa.

Write for list of ASTM standards wherein are noted standards for road and paving materials, petroleum products and lubricants — Free

National Bureau of Standards (write to Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for any of the below standards.)

CS80-41	"Electric Direction Signal Systems other than semaphore Type for Commercial and Other Vehicles Subject to Special Motor-Vehicle Laws (after market)	$0.05
CS81-41	"Adverse Weather Lamps for Vehicles (after market)"	$0.05
CS82-41	"Inner-controlled Spotlamps for Vehicles (after market)"	$0.05
CS83-41	"Clearance, Marker and Identification Lamps for Vehicles (after market)"	$0.05
CS84-41	"Electric Tail Lamps for Vehicles (after market)"	$0.05
CS85-41	"Electric License-plate Lamps for Vehicles (after market)"	$0.05
CS86-41	"Electric Stop Lamps for Vehicles (after market)"	$0.05
CS87-41	"Red Electric Warning Lanterns"	$0.05
CS88-41	"Liquid Burning Flares"	$0.05
CS97-42	"Electric Supplementary Driving and Passing Lamps for Vehicles (after market)"	$0.05
CS108-43	"Treading Automobile and Truck Tires"	$0.10
CS110-43	"Tire Repairs (vulcanized)	$0.05
CS142-47	"Automotive Lifts"	$0.10

Interstate Commerce Com. (write for copies to Supt. of Documents).

INTERSTATE COMMERCE ACT, REVISED TO JAN. 1, 1946. PART II of this act (formerly Motor Carrier Act, 1935) is applicable to transportation of passengers or property by motor carriers engaged in interstate or foreign commerce	$0.65
GENERAL RULES OF PRACTICE BEFORE THE COMMISSION	$0.20
MOTOR CARRIER SAFETY REGULATIONS, REVISED, covering Ex Parte No. MC-2, Maximum Hours of Service of Common and Contract Carriers, Ex Parte No. MC-4, Qualifications of Employees and Safety of Operations and Equipment of Common and Contract Carriers, and Ex Parte MC-3, Private Carriers	$0.25

U. S. Government Publications (write to Superintendent of Documents).

The list of publications containing laws, regulations, and government standards is far too long for inclusion here. However, the price lists presented below are for all government publications relating to highway transportation:

PRICE LIST 10 Laws. Federal Statutes and Compilations of Laws on Various Subjects	Free
PRICE LIST 25 Transportation and Panama Canal. Railroad and Shipping Problems, Postal Service, Communications, Coast Guard, Panama Canal	Free
PRICE LIST 45 Roads. Construction, Improvement & Maintenance	Free
PRICE LIST 53 Maps. Govt. Maps, and Directions for Obtaining them	Free
PRICE LIST 59 Interstate Commerce. Steam Railways, Motor Carriers, Carriers by Water	Free
PRICE LIST 62 Commerce and Manufacture. Foreign trade, Patents, Trusts, Public Utilities	Free

Compare NEW DODGE "Job-Rated" TRUCKS feature for feature!

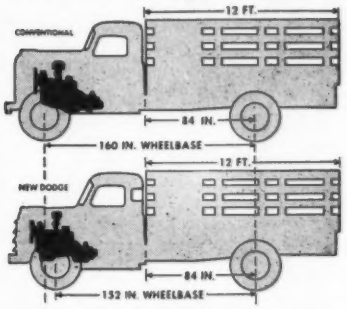
Read this 10 Point Comparison

(Dodge Model F-152; 14,500 pounds Gross Vehicle Weight—and Comparable Competitive Models.)

FEATURES AND ADVANTAGES	DODGE "Job-Rated" TRUCK	TRUCK "A"	TRUCK "B"	TRUCK "C"	TRUCK "D"
Wheelbase	152 in.	161 in.	158 in.	159 in.	161 in.
Cab-to-Axle—to take 12-foot body	84 in.	84 in.	84.06 in.	84 in.	84 in.
Wide-Tread Front Axles (shorter turning—more stability)	62 in.	58 in.	60.03 in.	58¾ in.	58 in.
Modern "Cross-Type" Steering	Yes	No	No	No	No
Turning Diameter * —Left	50½ ft.	61½ ft.	60½ ft.	54½ ft.	66½ ft.
—Right	50½ ft.	61½ ft.	54½ ft.	54½ ft.	66½ ft.
Maximum Horsepower	109	93	100	93	100
Total Spring Length (Front and Rear "Cushioned Ride") †	194 in.	171⅛ in.	162 in.	176 in.	182 in.
Cab Seat Width (Measure of Roominess) ‡	57¼ in.	52¼ in.	51½ in.	47½ in.	52¼ in.
Windshield Glass Area ▲	901 sq. in.	713 sq. in.	638 sq. in.	545 sq. in.	713 sq. in.
Vent Wings plus Rear Quarter Windows	Yes	No	No	No	No

* To outside of tire (curb clearance.) Computed from data based on tests or computations obtained from usually reliable sources. † All four springs. ‡ Measured from production models. ▲ Computed from width and depth measurements; no allowance for contours.

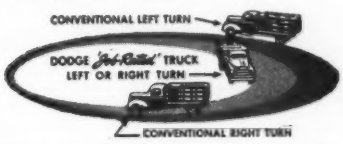
Better Weight Distribution Easier Handling Shorter Turning Diameters



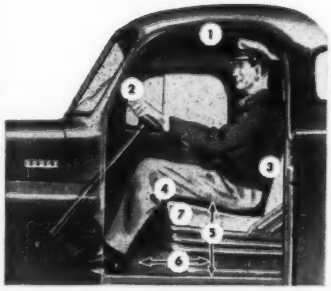
Front axles have been moved back, engines forward, placing more load on the front axle. While cab-to-axle dimensions are the same, wheelbases are shorter, giving better weight distribution, and increased payload.

This new weight distribution, combined with longer springs, produces a marvelous new "cushioned-ride."

You get still more comfort from new "Air-O-Ride" seats, with their easily controllable "cushion of air."



You can turn in much smaller circles, both right and left—you can back up to loading platforms or maneuver in crowded areas with greater ease—because of new type "cross-steering," shorter wheelbases, and wide tread front axles. In all, 248 different *"Job-Rated"* chassis and body models. Up to 23,000 lbs. G.V.W. Up to 40,000 lbs. G.T.W.



1—PLENTY OF HEADROOM.
2—STEERING WHEEL . . . right in the driver's lap.
3—NATURAL BACK SUPPORT . . . adjustable for maximum comfort.
4—PROPER LEG SUPPORT . . . under the knees where you need it.
5—CHAIR-HEIGHT SEATS . . . just like you have at home.
6—7-INCH SEAT ADJUSTMENT . . . with safe, convenient hand control.
7—"AIR-O-RIDE" CUSHIONS . . . adjustable to weight of driver and road conditions.

Photo Courtesy Fruehauf Trailer Co.

MAYFLOWER MEETING STRESSES RESEARCH

Plans for implementing Mayflower's research and development program and for expanding its national advertising campaign highlighted Atlantic City sessions of the Mayflower Warehousemen's Assn.

A DISCUSSION of plans for the intensification, on a scale greater than heretofore attempted, of research and development in the household goods storage and carrier field and for the expansion of the national advertising campaign, which was launched last year to make the name Mayflower "synonymous with dependable moving and storage in every community in the land," highlighted the sessions of the 16th annual convention of the Mayflower Warehousemen's Assn., Atlantic City, April 5-8. Addresses, reports and informal membership discussions stressed not only the progress of the organization during the past year but its plans for further growth in this country and Canada . . . Thirty-three states, the District of Columbia and six Canadian provinces were represented by members attending the meeting . . . The entertainment program included in addition to many special events, cocktail parties sponsored by the Fruehauf Trailer Co., The White Motor Co., and the International Harvester Co.; also a dinner-dance and floor show arranged by the Aero Mayflower Transit Co. and, finally, the usual association banquet.

THE opening session featured an address by the retiring president, R. G. Culbertson, Culbertson Warehouse & Deposit Co., Seattle, Wash., who stated that Mayflower membership was at an all-time high, that the *esprit de corps* was never better and that the business volume of members had increased substantially during the past year. In discussing plans for furthering international relations, Mr. Culbertson stated that the success of the Victoria, B. C., convention had given rise to a surge of new ideas and to a determination the purpose of which would have a tremendous impact on the destiny of the association. Mr. Culbertson also stressed the importance of the association's research and development program which aimed at a scientific approach to many current problems and which sought to effect substantial economies and efficiencies through the standardization of equipment and techniques.

The need for a closer business relationship with our Canadian neighbors was discussed by Harry Johnston, Johnston National Storage, Ltd., Vancouver, B. C., at Tuesday's session. The mutuality of interests in the United States and Canada was emphasized by

Mr. Johnston, who stated that cooperation, understanding and the ability to buy and sell across the border with a minimum of governmental regulation were essential to the preservation of free enterprise in a world which is tending, more and more, to nationalization.

The objectives of Mayflower's national advertising program were outlined by the chairman of the advertising committee, M. R. Goodwin, Goodwin Moving & Storage Co., Spokane, Wash., and by Virgil A. Warren of Spokane. This discussion revealed, on the basis of a membership survey, that 80 percent of Mayflower's members were "tying-in" locally with the association's national drive through the medium of newspaper, radio and billboard advertising and through the use of car cards, direct mail and the use of Mayflower symbols on trucks and vans; also that members were experiencing added local prestige and business as a result of this national campaign.

Wednesday's business session, under the sponsorship of the Aero Mayflower Transit Co., included a number of notable addresses dealing with various phases of the moving and storage industry. Speakers included C. M. Gentry, one of the founders of the transit company, and P. A. Cooling, its president. Some of the legal aspects involved in pending ICC truck leasing hearings were outlined by John Sloan Smith, vice president and general manager of the transit company, while E. H. Lamkin, general sales manager, discussed the overall objectives of the association's advertising and sales campaign. New approaches to the problems of selling moving and storage services were described by Jack Lacey, Lacey Sales Institute, Boston.

Warm tribute was paid to R. G. Culbertson, the retiring president, by Leonard S. Clark, Drinkwater Sons, Inc., Greenwich, Conn., during the closing session on Thursday when Frank E. Hess, the Blakeslee Co., Waterbury, Conn., newly elected president, was inducted into office. In his address of acceptance, Mr. Hess briefly outlined some of his ideas relating to future association policy and stressed the importance of the national advertising and research program. Other speakers included William L. Snodgrass, director of District No. 3, ICC Bureau of Motor Carriers, who discussed the question of regulation versus non-regulation of carriers in the household goods field, and Frank W. Lovejoy, sales executive, Socony Vacuum Co., New York City, who outlined in a most effective manner, some of the fundamentals of successful selling. The session concluded with a forum discussion of current insurance problems, under the chairmanship of R. L. Maxwell, The Home Insurance Co., Chicago, Ill.

Frank E. Hess, new president Mayflower Warehousemen's Assn.

Mayflower Elects

OFFICERS and directors were elected as follows: Frank E. Hess, The Blakeslee Co., Waterbury, Conn., president; Carl F. Bailey, Try Me Transfer & Storage Co., Huntington, W. Va., secretary and treasurer.

Vice presidents are: Robert L. Dunn, D. W. Dunn Co., Boston, Mass. (New England District); Arthur C. Smith, Sr., Smith's Transfer & Storage Co., Washington, D. C. (Mid-Atlantic District); J. P. Ricks, Jr., Ricks Storage Co., Inc., Jackson, Miss. (Southeastern District); Harry W. Rogers, Rogers Transfer & Storage Co., Galveston, Tex. (Southern District); Harry Peters, Peters Moving & Storage, Louisville, Ky. (East Central District); A. Francis Roederer, Roederer Transfer & Storage Co., Davenport, Iowa (West Central District); V. P. Chamberlain, The Boyd Transfer & Storage Co., Minneapolis, Minn. (Midwestern District); V. D. Slocum, Van Nuys Van & Storage Co., Van Nuys, Calif. (Southwestern District); and Harry Johnston, Johnston National Storage, Ltd., Vancouver, B. C., Can. (Northwestern District).

Directors are: George H. Sampson, Forest Hills Storage Co., Inc., Forest Hills, L. I., N. Y. (New England District); Ward R. Scull, Virginia Transfer & Storage Co., Newport News, Va. (Mid-Atlantic District); J. B. Holloway, H. & L. Delivery Service, Hattiesburg, Miss. (Southeastern District); W. N. McKinney, American Transfer & Storage Co., Dallas, Tex. (Southern District); William S. Tucker, Ypsilanti Cartage Co., Ypsilanti, Mich. (East Central District); Charles R. Mooney, Sr., Mooney Moving & Storage Co., St. Joseph, Mo. (West Central District); Harold Burch, Burch Warehouse & Transfer Co., Pueblo, Col. (Midwestern District); Charles H. Samuels, U. S. Express & Storage Co., Oakland, Calif. (Southwestern District); and Frank C. Fairchild, Redmon-Fairchild, Inc., Yakima, Wash. (Northwestern District).

Coming Events

May 21-22—Semi-Annual Meeting, Wisconsin Warehousemen's Assn., Park Hotel, Madison, Wis.

June 14-16—Annual Conference, Canadian Warehousemen's Assn., Chateau Frontenac, Quebec City.

June 26-Sep. 11—International Industrial Exposition, Atlantic City, N. J.

July 1—New Orleans' International Trade Mart.

Aug. 10-13—First Western Packaging Exposition and Conference on Packaging, Packing and Shipping, San Francisco Civic Auditorium.

Sep. 27-Oct. 1—Third National Plastics Exposition, The Society of The Plastics Industry, Inc., not open to general public, Grand Central Palace, New York City.

Oct. 8-13—Annual Convention, American Trucking Assns., Washington, D. C.

Oct. 14-16—Annual Convention, Southwest Warehousemen's & Transfermen's Assn., Skirvin Hotel, Oklahoma City, Okla.

Feb. 7-10, 1949—58th Annual Convention, American Warehousemen's Assn., Fairmount Hotel, San Francisco. (Joint meeting of both divisions: National Assn. of Refrigerated Warehouses and AWA Merchandise Div.)

Class Commodity and Exception

Jack McCormack, free lance traffic manager, explains these three complicated and important rate classifications.

By HENRY G. ELWELL,
Traffic Consultant

"EVERY stage in production and every step in distribution is dependent on functions of transportation. Actually, raw materials and finished products cannot be moved without some sort of transportation."

Jack McCormack, free lance traffic manager, spoke to Ronald Collins, purchasing agent of the Holden Company, as they discussed freight rates in the latter's office.

"And," he added, "freight rates today are important factors in a manufacturer's costs of transportation. The rates of both the railroads and the motor truck carriers, as well as those of the steamship lines, are rising at a rapid pace. As an example of the situation in general—the class rate on a given commodity, moving less than carload from Point A to Point B, was 50c. per 100 lb. on June 30, 1946. As of January 5, 1948, the rate had advanced to 80.4c., an increase of about 60 percent in less than two years, with a further rise in the offing. Then, too, there is a related angle to this matter of increased transportation costs which should be weighed by manufacturers. The trend in merchandising in the past few years has been toward buying and shipping in small quantities instead of buying in carloads and storing the commodities until needed."[1]

"Why should that trend lead to higher costs of transportation?" Collins inquired.

"It's this way, Ronald. Rates for the transportation service are divided into class rates and commodity rates, and some articles, which move in large volume and in carload quantities, are usually accorded commodity rates, while articles of general merchandise, moving in less than carload quantities, usually take class rates.[2] Class rates are ordinarily on a higher level than commodity rates.[3] Among the factors affecting the expense of class-rate traffic is the loading of less than carloads. If shippers/consignees keep on shifting to the shipping of goods in less than carload lots, even higher freight rates will have to be charged.[4] The more less than carload tonnage offered the railroads, the greater expense to them in the form of larger transfer stations, bigger labor gangs, extra clerical help, etc. Also, the railroads will have to spend money in obtaining extra materials handling equipment. Much the same thing applies to motor truck transporting, too."

"Do you mean that only less than carload shipments move on class rates?" Collins queried.

"No," McCormack began. "Class rates . . ."

Author's Note: Names of persons and company are fictitious.

"Well, then," Collins interrupted, "I wish you would explain the difference between class and commodity rates."

"I'll be glad to," said McCormack, "but first comes the classification. All freight rates rest on the classification descriptions and ratings. Classification ratings are made in the light of all the incidental services in the transportation of a commodity.[5] In classification making, all grades of a given article, cheap and expensive, are usually rated on the same basis, the rating being one which would be too high for the cheaper grades, and too low for the more expensive ones, were it possible to rate them separately.[6] Except when extreme values are involved, weight per cubic foot is a more important factor than value per pound in fixing classification for light and bulky articles.[7] Classification terms must be taken in the sense in which they are generally understood and accepted. No reasonable interpretation would permit the conclusion that the classification of 'machinery and machines' embraces trackless trolleys.[8] While in English the adjective is generally placed immediately before its noun, many exceptions exist and a meaning which is clear from commercial or common usage, or from the context, may not be rendered obscure by resort to technical terms of grammar.[9] I mention these seemingly unrelated measures to indicate the broad principles governing the classification."

"I can see why the classification must be as clear and concise as possible," Collins commented. "By the way, I presume new articles take higher rates than old or second-hand?"

"The rates on new and second-hand articles are the same," McCormack said. "Here is what the Interstate Commerce Commission stated in 223 ICC 375: 'It would be difficult, without affording an easy and convenient means for misbilling and discrimination, and impracticable, to establish ratings on damaged, used, or second-hand articles different from those on like articles new.' In 209 ICC 177 the commission declared: 'The general rule in classifying second-hand articles is that the used article is given a lower rating than the new article of the same kind only when the used article has no value except as junk or scrap.' Answering you more specifically, here is what the commission said in that same decision: 'Rates named on wornout boots and shoes are not applicable on old worn shoes which can be repaired for further wear and have value as shoes.'"

"Now, what about the class rates?" Collins suggested.

"They are rates which are directly related to the classification," McCormack explained. "Class rates move all articles of commerce not accorded commodity rates.[10] They are intended to reflect the maximum of reasonableness on all classes of traffic.[11] They vary widely in the uses to which they are put and in the theories upon which they are constructed.[12] Class rates are designated by numbers and letters, often bearing some definite percentage relationship to one another and generally either based upon distance or made between specific points with due regard to distance.[13] Under distance scale found reasonable, the rate between any two points is to be determined by the shortest route over which carload traffic can be moved without transfer of lading, except when the shortest route would short-haul a carrier, or is impracticable for movement of livestock, as, by lack of suitable train schedules."[14]

"Do you imply that class rates are established strictly on distance, and are the same in all parts of the country?" Collins asked.

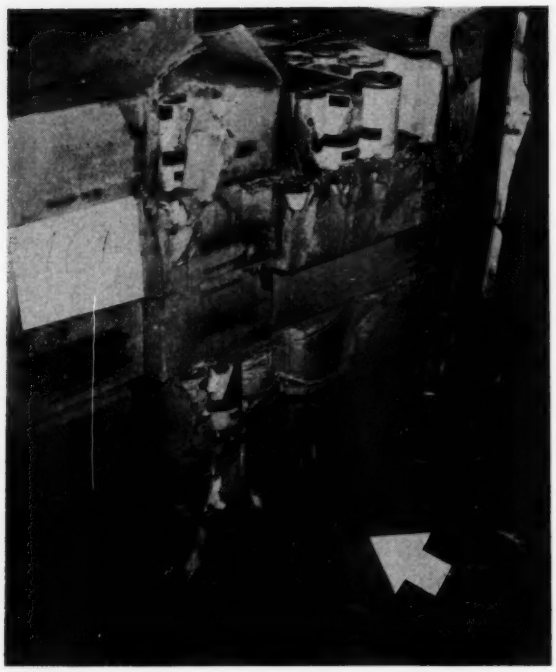
"No," objected McCormack. "Keep in mind that different theories are used in making class rates. A strict distance basis from the South to the North would disturb present relations between different southern mills, particularly as between nearer and farther distant mills competing in the same market.[15] Class rates move more traffic in the North than in the South, which suggests the level in the North is influenced downward and in the South upward. By maintaining class rates in southern territory on a high basis, opportunity is afforded for lower level of commodity rates than might otherwise be possible.[16] Class rates applying between points in Canada are relatively higher than similar rates in official territory, the higher level being due to the comparatively small population, the lighter density of traffic, severe weather conditions, and the resulting high operating costs."[17]

"Well," demanded Collins, "if distance is not the only factor, what other grounds exist for maintaining diverse rate formations in the several sections of the country?"

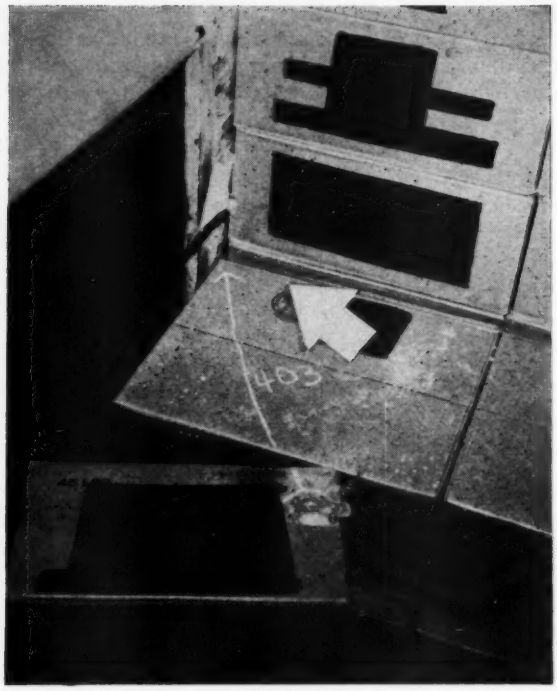
"There are many reasons," McCormack stated, "but chief among them are the elements of geographical location and raw material supply, in addition to population density. Take New England in competition with the eastern section of the Middle Atlantic States. If the level of rates in that territory to western and southern points should be excessive, in comparison with the rates to and from New England and the same points, then the eastern area of the Middle Atlantic States would be placed in an unreasonable competitive position. Also, it would not obtain the benefit of its geographical location. On the other hand, strictly applying the rule of geographical location when making rates to and from the eastern portion of the Middle Atlantic States, without considering competitive conditions, would place New England at a serious disadvantage. Therefore, there is only a slight variation in the level of rates on shipments moving eastward to New England and to the eastern sector of the Middle Atlantic States from points located west of an imaginary line running from Buffalo to Pittsburgh and on through Wheeling, W. Va. A similar rate parity also applies on westbound products to destinations located west of an imaginary line starting at Cleveland and on over to the Ohio River."

"So," continued McCormack, "geographical location, population density, and competitive conditions, as well as other contributing

(*Continued on Page* 81)



Photograph F

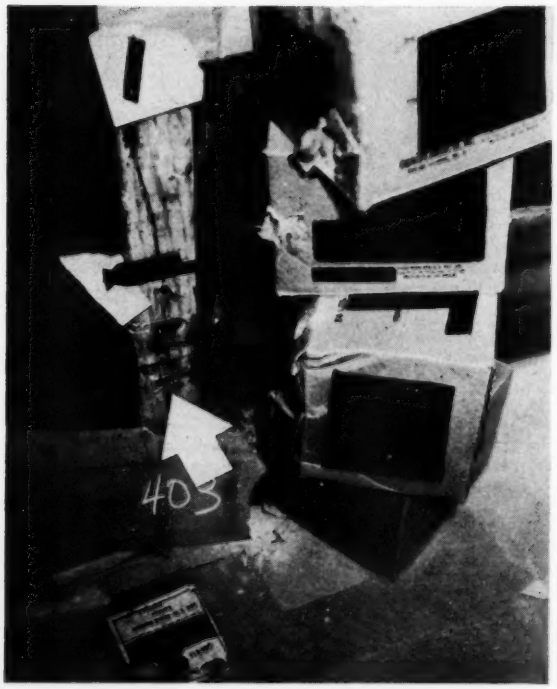


Photograph H

WATCH THAT CAR DOOR!

The few extra inches of space at freight car doorways are danger spots that play havoc with packaged freight . . . Blocking of various kinds can prevent costly damage claims.

Photograph I



FAILURE to block freight car doorways, or failure to block them sufficiently at the correct points, often causes severe damage to packaged freight, the Shipping Container Institute reveals in a series of documentary photographs taken as part of its nation-wide study of the causes and responsibility for shipping damage. The institute has taken photographs in some 700 freight cars in its study of over 860,000 fibre shipping containers.

The few extra inches of width at car doorways are danger spots when not correctly blocked, as the accompanying pictures show. The load shifts, and when the doors are slid open, projections in them causes the damage shown in photograph F.

To prevent this, doorways should be blocked. This may be done in many ways, by a wooden framework with horizontal or vertical cross members spaced closer than the corresponding dimensions of the boxes, or by nailing boards or steel straps from wall to wall across the opening. Care must be taken with the blockings, however, because, as is shown by figures H and I, the sharp ends of the metal straps, which should be bent back under before nailing, will cause damage. A sheet of corrugated fibreboard can also be used as a buffer between the bracing and the packages.

AIR

(*Continued from Page* 38)

Dramatic airline accidents occur and receive considerable publicity, since aviation, which enjoys the fruits of tremendous publicity for its constructive achievements, also suffers the disadvantage of the same widespread publicity for its difficulties. As a consequence it seems to many as if air travel had somehow become more dangerous because an increasing number of people seem to be killed. The fact is, however, that air transport is no more dangerous than it has been for several years for the individual passenger. It just seems that there is more risk because many more people are flying in larger planes. Many of the aircraft now used by the airlines have a passenger capacity more than double that of those used prior to 1943. Plane crashes involving more than ten facilities were very rare prior to 1946, but in the first six months of 1947 the six fatal accidents averaged 25 passenger deaths each. However, despite the increase in fatalities per accident, the individual passenger was carried with a greater degree of safety in 1946 and 1947 than he was in 1944 and 1945.

It must also be borne in mind that the amount of scheduled air carrier operation in this country about doubled from 1945 to 1946, the last year for which full information is now available. Therefore, had the 1945 level of safety been carried into 1946, there would have been double the accidents or fatalities. Actually, the accidents or fatalities did not double; they were less than doubled, which resulted in a figure of 2.1 fatalities per 100 million miles of air travel in 1945 as against 1.2 in 1946.

In considering the question of air accidents, people do not distinguish between those which take place on the scheduled, certificated airlines of the United States, those in non-scheduled or non-certificated flying, in private flying, or even accidents on foreign-owned airlines outside this country. Accidents in England, Holland and China be-

(*Continued on Page* 66)

UNUSUAL BUSINESS

(*Continued from Page* 34)

about 1300 lbs., would have to be completely boxed. The best delivery time he could get was seven days and this delivery was not guaranteed. He had no facilities for boxing and no shipping platform from which the machine could be picked up. He was really in a jam and in desperation he called a household goods carrier. He didn't call the van company until Friday; nevertheless the carrier was able to deliver. A van, almost completely loaded, was ready to leave for the west by Saturday. It was dispatched to the tool plant to load the machine, uncrated and unboxed. With a pair of skids it was loaded in about 15 minutes and tied to the side of the van. About 50 cu. ft. of space held 1300 lbs. of pay load. Delivery was made Monday morning as promised and everybody was happy. No boxing required. One hit, one run, no errors.

Coffins are pretty fancy articles when they are minus the outside box. A manufacturer of caskets had a load of them to go to St. Louis from the east. They didn't need the pine boxes in St. Louis so there was no reason to send them. They did need the coffins however, and needed them badly. What was done? Simple. They were loaded in a van without anything on them but furniture pads and delivered to destination without a single scratch or mar. However, there was one near fatality. The insurance man who had written the transit insurance on the shipment darn near died when he found out how they were being shipped. He will never worry about it again.

Along the same line, a church in North Carolina fell heir to a considerable piece of change. The first thought was to refurnish the church and the second was to get a new minister. Having the cash they did both, and everything was perfect. Arrangements were made to move the new minister, and as far as this went it was a perfectly normal job. A few days before the minister was to move, he came to the household goods carrier on behalf of his new church. It had written him for help. It seems that the manufacturer of the church pews and equipment was not living up to his promised time for delivery. The household goods carrier went to see the manufacturer. All the church equipment was finished, polished and waxed until it shone. However the manufacturer could not get the time, material or labor to crate it for freight shipment. Even if these essential ingredients had been available, the new furnishings would not arrive in time to be installed and the new minister would have only a new congregation minus new furnishings. The flexible household goods carrier turned the trick by loading one van with the minister's household goods and two others with the church pews. All three loaded the same day, were delivered on the same day and installed on time. Hallelujah!

Have you ever seen the parabolic reflector of a searchlight? It is quite a piece of precision work. In order to ship one by freight or express it must be completely boxed. The bracing inside of this box is wonderful. It consists of a series of concentric padded rings which have to be made accurately and built in with the greatest caution so no uneven strain is put on the reflector. The box is costly and weighs more than the reflector. A considerable number of these reflectors measuring from four to six feet in diameter had to be sent several hundred miles in a hurry. There was no time to spend in boxing. A household goods carrier was called in and asked if it would be possible for him to handle the job. The answer was yes. Each reflector was wrapped in furniture pads. they were then nested together and strapped to the van. They arrived in perfect order.

Before the war the Civil Aeronautics Authority was very busy installing radio beam stations on the airways of the nation. These stations were put up in every state and most of them were at off line points, miles from the nearest rail head. For shipment by l.c.l. rail freight the equipment had to be boxed, then delivered from the nearest freight station at destination by truck. Sometimes this delivery distance was more than 50 miles. The boxing was expensive and added a great amount of weight to the shipment. When the equipment finally arrived at the radio range station it had to be unboxed and carried into the station buildings. The easy answer to this transportation problem was a household goods carrier. This carrier took these shipments into every state and delivered right in the radio range station buildings. The equipment was shipped unboxed and uncrated. Some station equipment however was delivered by other types of carriers. On most of the l.c.l. rail shipments there were damage claims of more than $100 and on one shipment which was attempted by commercial truck there was a damage claim of over $400. The household goods carrier transported more than 60 shipments. Each one of these shipments weighed in excess of 7,000 lbs. They were taken by motor van to such points as Millinocket, Me., and Palacios, Tex.; Medford, Ore., and Inyokern, Calif.; Minneapolis, Peoria, Baton Rouge, and to other points. There was a total damage claim on all of these shipments of $2.10. The household goods carrier could do the job where no one else could.

Whenever there is hauling to be done that requires specialized handling and equipment or when transportation is required for articles of unusual nature or value; the household goods carrier can do the trick. Handling household goods has trained us to haul almost anything in an unpacked condition. We can save the shipper time, money and worry and also can effect cleaner deliveries.

AIR CARGO

(*Continued from Page* 35)

scheduled airlines are increasing their personnel to handle sales and advertising of air freight. But in spite of the finest equipment available and speeded up schedules to all points of the country, the fundamental problem of the lazy anchor man still confronts the airlines in the handling of air freight.

Motor carriers must maintain a constant alertness for new ways to speed up their end of the distribution chain.

Our company services incoming and outgoing flights from the Los Angeles Municipal, Long Beach, and Lockheed airports. Each arrival and departure is met promptly by well trained drivers operating two-ton trucks with van-type bodies. Recently, we placed in operation a thirty foot semi-trailer so that all light shipments could be transferred in one move to our Los Angeles terminal. This leaves the two-ton trucks free to make direct delivery from the airport of heavy or unusual shipments.

Small shipments from all airfields are routed through our central terminal for redistribution. Here, a 300 ft. continuous belt conveyor, equipped to handle 1,500 packages per hour, speeds the handling and sorting. These small air freight shipments are consolidated with our regular daily deliveries, which are made to all points of Los Angeles and the surrounding communities. However, special attention is given to the routing of air freight so that all shipments to points within a 25 mile radius of Los Angeles may be delivered before noon.

Now as to pickups. Air freight packages are picked up on the same run with regular ground shipments so that only a single trip is necessary to make all freight collections. Since all deliveries are planned to be completed by noon, pickups begin about one o'clock, after the driver's lunch. The driver calls the main office and receives his list of calls. With

(*Continued on Page* 78)

Left to right, Saul Poliak, Clapp & Poliak, Inc.; Samuel W. Gibb, president Material Handling Institute; and Curtis H. Barker, Jr., chairman, Materials Handling Div., ASME, at the lottery drawing of booth assignments.

HANDLING SHOW ASSIGNS BOOTHS

Booths have been assigned for exhibits at the Third National Materials Handling Exposition in Philadelphia, Jan. 10-14, 1949 . . . Samuel W. Gibb, MHI president, announces gigantic Hawaiian industry handling program.

BOOTH assignments drawn under the new lottery system for the Third National Materials Handling Exposition, to be held in Philadelphia, Jan. 10-14, 1949, under the auspices of the Material Handling Institute and the American Society of Mechanical Engineers have been announced by Clapp & Poliak, Inc., exposition managers.

The growing interest in the use of materials handling equipment is emphasized by the announcement of Samuel W. Gibb, MHI president, of one of the largest industrial equipment projects of peacetime, the investment by the Hawaiian food, sugar, pineapple and packing industries of some 25 million dollars in materials handling devices and methods. This program, he said, will enable Hawaiian industrialists to lower their break-even point so as to compete with industries elsewhere in the world with lower wage rates.

That this activity and others have greatly increased the distribution of materials handling devices is evidenced by the fact that sales for the handling industry for the first quarter of 1948 are about 10 percent above those for the last quarter of 1947, Mr. Gibb explained.

In announcing the situation, Mr. Gibb said that devices are being placed in use on the farms as well as in the factories in Hawaii, thus mechanizing to a great extent the industry from growth to shipside and thence to consumers all over the world. Equipment now being placed in use includes all types from all manufacturers, large trucks for gathering harvested crops, special wide trailers, scales, and terminal storage and handling devices. Hawaii's whole economy, which recently was plagued by rapidly-rising costs, stands to be changed and improved by this development. Mr. Gibb cited a typical case, a large food manufacturing concern, where research studies showed a 35 percent increase in the cost of raw materials and a 75 percent increase in wage rates over pre-war levels, but only an 11 percent product unit cost increase.

A list of the firms scheduled to date to exhibit at the handling show and the booths they will occupy is as follows:

Exhibitor	*Booth No.*
Acme Pallet Co., Inc.	22, 23
Acme Steel Co.	705
Addison Semmes Corp.	611
Aerol Co., Inc.	127
Aeroquip Corp.	610
Albion Industries, Inc.	101
The Alvey Ferguson Co.	142
American Engineering Co.	109
The American Pulley Co.	801, 802, 803
Anthony Co.	121
Atlantic Distributors, Inc.	44
Automatic Transportation Co.	604, 605 524, 523
Automotive Rubber Co., Inc.	33
Barber-Greene Co.	830, 831, 832, 833
Barrett-Cravens Co.	408, 331
Baker Industrial Truck Div. of The Baker-Raulang Co.	609, ½ of 608
The Bassick Co.	41, 42, 43
Bearing and Transmission Co.	314
Bell Aircraft Corp.	129
Benbow Manufacturing Co.	17
Better Packages, Inc.	103
Brainard Steel Co.	505
Brantwood Products	32
The Buda Co.	139
The E. W. Buschman Co.	509
C & D Batteries, Inc.	612, 717
Chisholm-Moore Hoist Corp.	826, 827
City Machine Co.	405
Clark Equipment Co., Clark Truck-tractor Div.	602, 603, 526, 527
The Cleveland Wire Spring Co., Div. of Reynolds Spring Co.	145
Coffing Hoist Co.	54
Comet Manufacturing Co., Inc.	34
Conco Engineering Works	825
Conover Mast Publications, Inc.	27
Crescent Truck Co.	138, 143
Dempster Brothers, Inc.	328, 329, 330
Distribution Age	1, 2
Divine Brothers Co.	519
Drake, Startzman, Sheahan, Barclay, Inc.	25
Economy Engineering Co.	312
Thomas A. Edison, Inc.—Edison Storage Battery Div.	420
The Electric Products Co.	614
The Electric Storage Battery Co.	608-A
Elizabeth Iron Works, Inc.	828, 829
The Elwell-Parker Electric Co.	615, 616, 713, 714
Equipment Manufacturing, Inc.	37, 38
Fab-Weld Corp.	727
The Fairbanks Co.	105
Faultless Caster Corp.	516
Federal Telephone and Radio Corp.	712
Harry J. Ferguson Co.	136
Flow	128
General Electric Co.	733, 734
The Geneva Metal Wheel Co.	302

Department of Transportation

Harris and Ewing

S. 1812, the Capehart Bill, would place all departments, agencies, boards, bureaus and government corporations, that presently exercise 91 types of control over transportation in the U. S. in one Department of Transportation.

By ARNOLD KRUCKMAN

Washington Correspondent

THE President, the Congress, the Bureau of the Budget, and the Commission on Organization of the Executive Branch (headed by former President Hoover), are all trying to find a way to tie up in a single bundle all the 29 departments, boards, bureaus, agencies and government corporations which exercise 91 types of control of one form or another over railroads, water carriers, highway carriers, airlines and pipelines.

The President seeks absolute authority to do the job under the powers already given him; the Congress is currently considering S. 1812, introduced by Republican Senator Capehart of Indiana, which would establish a Department of Transportation with cabinet status; the Bureau of the Budget, obviously, is making studies to accomplish the purpose in order to reduce government expenses; and the Commission on Organization of the Executive Branch more or less carries on in the tradition of the original Board of Investigation and Research, now defunct, which was the first to suggest the amalgamation of the different agencies which pull transportation facilities and services hither and yon.

This BIR, headed by Nelson Smith, came into existence back in 1941. It was mainly a sincere intellectual microcism with political coloration. It was fathered by the New Deal and President Roosevelt. The proposal to knead the affected agencies together sprang from a very genuine need, that had been increasingly patent since the early part of this century. As the services and the functions and the effects of the transportation industry expanded and became more complex, and profoundly changed our economic, social and political life, the federal agencies which concerned themselves with the resulting problems increased. Bureaucracy quite honestly always feels impelled to have more and more of a hand in such situations.

The President, early in April, asked the Congress to give him the power to include in his pro-

Capehart Bill Opposition

FEAR that the Interstate Commerce Commission would not remain free from political influence and that it would lose its traditional continuity of policy in regulation of carriers if it were transferred from the legislative to the executive branch of the federal government, under the pending S. 1812, the Capehart Bill, are reasons for opposition to the bill expressed by the Assn. of American Railroads and the American Trucking Assns., Inc. John V. Lawrence, managing director, ATA, and J. Carter Fort, vice president and general counsel, AAR, each have testified before a subcommittee of the Senate Interstate and Foreign Commerce Committee opposing the bill.

Rate-making power could, if politically controlled, be exercised "in such a way as to foster the development of one section of the country and retard the development of another section," Mr. Fort warned. He contended that the bill "would not make any substantial contribution toward the effectuation of a sound transportation policy through the centralization of governmental responsibility."

Mr. Lawrence testified that, in his opinion, there has not been a "reasonably consistent body of administrative action" by the commission in carrying out the intent of Congress expressed in the National Transportation Policy with respect to rail-truck competitive rates and the question of railroad operation of truck lines. He granted, however, a "continuous trend in one direction or the other rather than something that could change almost overnight every few years." He then pointed out ICC members have served terms averaging nine years and 11 months, whereas cabinet members in the same period averaged only three years and eight months.

gram of reorganization the agencies which are now exempt. This clearly meant the Interstate Commerce Commission. It would now be impossible for him to establish a complete integration of agencies concerned with transportation because the ICC, like the Federal Trade Commission, the Federal Power Commission, the Federal Communications Commission, and a few others, is not subordinate to the executive branch. It is purely an extension of the Congress itself. It was created to do the job of regulating rates and analogous powers, which are constitutionally given to the Congress. The ICC, in effect, is just as much a part of the Congress itself as are the groups of experts and specialists who function directly under the Congress in its own office buildings or in the Library of Congress. The executive cannot touch them. FDR tried to dismiss a member of the Federal Trade Commission and was told by the courts he did not have the authority. This important fact is often forgotten. As a matter of fact, if it were inclined to do so, the Congress could extend itself into many other similar bodies and agencies to carry out its constitutional powers. There are those who say it might conceivably do so if the executive ever were tempted to go too far in grabbing borderline authority.

It is doubtful if the Congress will give the President the authority to reorganize the ICC. For this reason it is apt eventually to act upon the essence of the bill, S. 1812, now before its Interstate and Foreign Commerce Committee. This provides that all departments, boards, bureaus, agencies, and government corporations, including the Interstate Commerce Commission, shall be combined in a Department of Transportation, with a Secretary who sits in the cabinet.

The Bureau of the Budget is an executive agency. It is actually a part of the White House unit. Its reorganization of the transportation units of the government therefore would frankly be an executive program.

The Commission on Organiza-

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RAILROADS AND FREE ENTERPRISE

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War I, their roadbeds and equipment were in very poor condition. In order to rebuild, the railroads spent millions of dollars, mostly borrowed money. Hardly had they completed the rebuilding of roadbeds, equipment, etc., when along came the depression with years of reduced incomes for the rail carriers along with the rest of us. As you know, numerous railroads went into bankruptcy during the 1930's.

Then—World War II. The railroads did a grand, an outstanding, job during the war period in the moving of war materials and civilian goods, and they made millions of dollars in profits. Unfortunately, though, a large portion of those profits had to be used to pay off back debts. While the war was being fought the rail carriers were unable to obtain sufficient replacements of freight cars because of government restrictions. This forced the railroads to use every available car, in many cases long after the time a car should be discarded and scrapped.

At the close of the war it was expected that freight cars could be rapidly supplied by the car builders. However, a series of strikes in the steel and other industries prevented the railroads from securing new freight cars in the needed quantities. Even yet, freight cars which have been on order for months are still in the blueprint stage, although conditions are improving.

In other words, since the end of the war the railroads have been compelled to scrap freight cars much faster than they have been receiving new cars. Yet they have managed to move the tremendous amount of tonnage offered by the shippers. With all the handicaps, the fact remains that the railroads of this nation are still able to provide better service than that furnished anywhere else in the world.

Increases in costs and wages caused the railroads to seek higher freight rates in 1946. The higher rates were authorized by the Interstate Commerce Commission. Again, in July of 1947, the rail carriers found it necessary to request authority to publish rate increases. The commission granted a 10 percent advance as a probable forerunner of further general increases. In handing down its decision authorizing this increase, which became effective Oct. 13, the commission referred to the argument that an advance in freight rates would add to the inflationary spiral. It stated:

> "In our judgment that factor [inflation] is outweighed by the necessity of keeping the carriers, in the face of higher costs of operation, in a reasonably healthy condition, in order that they may maintain their credit, procure additional equipment which is now urgently needed, and rehabilitate and improve their properties generally to take care of the demand of the public for adequate transportation service."

Shippers, naturally, are not happy as they note freight rates rising. Yet the majority of shippers understand that the railroads must have a level of rates on which they can exist and maintain their properties. Whether we personally like it or not, either the railroads must be permitted to earn reasonable profits, or they eventually will become bankrupt. That would lead to government ownership of railroads.

Government ownership of the railroads in this country would be the first step in the breakdown of our American free enterprise system, because industry and business ultimately would travel down the same road. Business and industry, without private ownership of the railroads, would not be able for long to carry the load of taxation. Just as our nation could not continue "half slave, half free," neither would it continue half socialistic, half free-enterprise for any great length of time.

And do not overlook the actuality that there are groups which are working with the view of bringing about government ownership of the railroads in this country. It has happened in Great Britain. It could happen here. Among those who have publicly advocated government ownership of railroads is Mr. Whitney, head of the railroad brotherhoods. I am inclined to think he may privately be opposed to such a plan, but nevertheless he has spoken in favor of it.

Shippers and business and professional men ought not to ignore the situation pertaining to the railroads. The problem is an economic one. It should be handled on that basis if we are to avoid government ownership in this country.

Abroad, the trend is toward nationalization of railroads. In some countries broader steps have been taken. In Great Britain, the Labor Government has brought about the nationalization of all types of common carriers and will own and operate them. Shippers will not be permitted to operate their own trucks beyond 40 miles except under special conditions. Operations of this vast coordinated system is to be vested in a political officer, the Minister of Transport. There is no economic reason for government ownership of the transportation agencies in Great Britain; it is an experiment in socialism.

Of all the countries in South America, only two permit private ownership of transport. In Canada, only one railroad is under private ownership. So far as I can learn, these are the only places in the world, outside of the United States, where the entire railroad system of any country is not owned and operated by the government. So we note the trend abroad. We ought not to allow that trend to gain any real foothold in the United States.

Government ownership of rail-

roads would be bad for the railroad employes, bad for the shippers, and bad for the public at large. As has been emphasized by the Transportation Assn. of America, nationalization of the rail carriers in this country would mean:

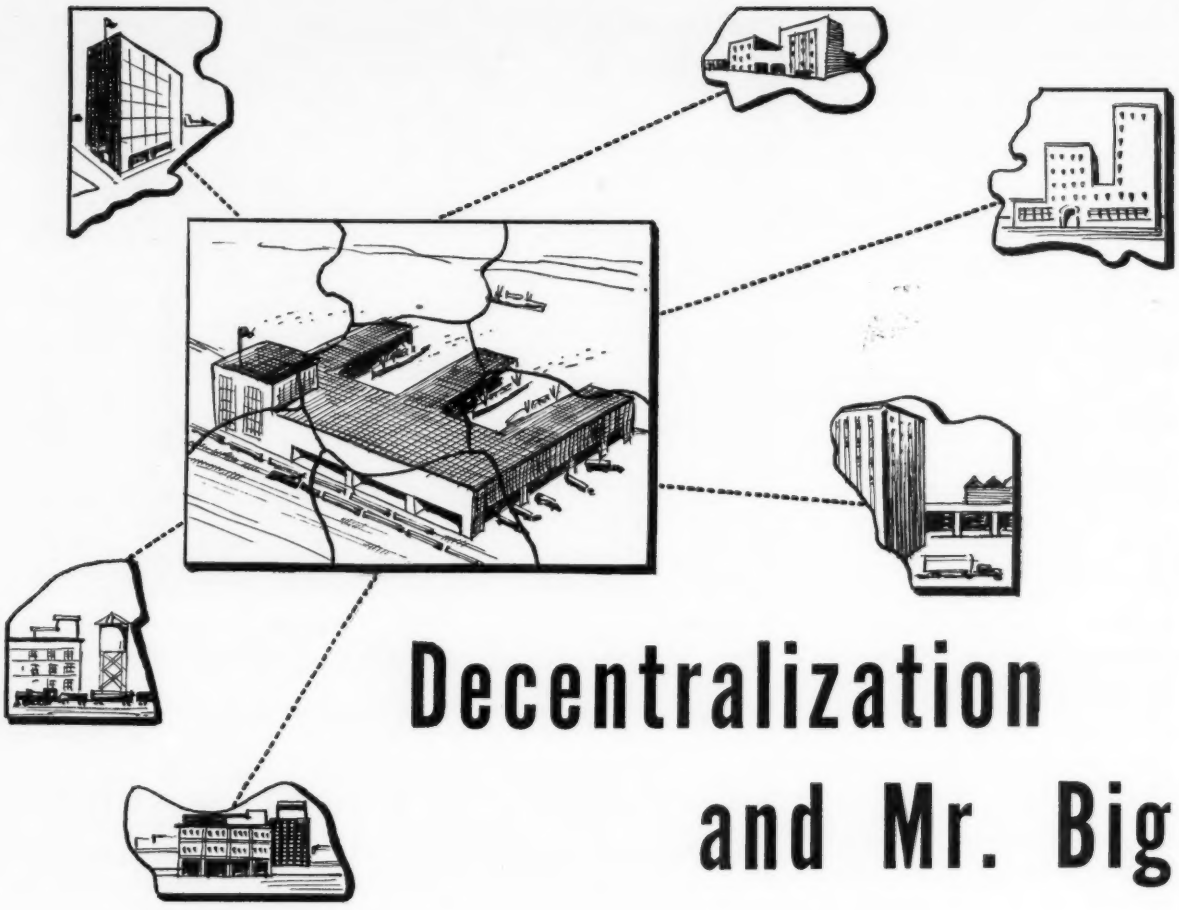
> "1. Government would sell transportation at its own price, subjecting shippers to political rate making.
>
> "2. Government would control the largest single unit of domestic buying power—a powerful weapon to regiment other forms of transportation, such as motor trucks, as well as agriculture and industry."

Yet forces are at work in this country. On June 30, 1947, the PCA urged that the United States take over public control of all utilities, including mines, power, and railroads. If that move should ever succeed, then the American free enterprise system would quickly cease to exist.

We can prevent such a calamity if all thinking citizens will heed the danger and take action. All of us, whether in the field of agriculture, industry, finance, or transportation, must work together in preventing government ownership of railroads in the United States. Thus will the railroads of the United States become once again healthy organizations contributing to the benefit of all.

Freight Car Loadings Up

Freight car loadings in the second quarter of 1948 are expected to be 3.5 percent above those in the same period in 1947, according to estimates prepared by the 13 Shippers Advisory Boards prior to the development of labor difficulties in the coal fields. On the basis of those estimates, freight car loadings of the 32 principal commodities will be 8,642,908 cars in the second quarter of 1948, compared with 8,350,329 actual car loadings for the same commodities in the corresponding period in the preceding year. All of the 13 Shippers Advisory Boards estimate an increase in carloadings for the second quarter of 1948 compared with the same period in 1947, except the Central Western and Trans-Missouri-Kansas regions.



Decentralization and Mr. Big

The roots of the decentralization of industry movement in this country extend far below the surface . . . In this article, Mr. Merish discusses, from the top management viewpoint, some of the reasons for this accelerating trend.

By FRED MERISH
Special Correspondent

BECAUSE decentralization is under way in this country, top management should have a comprehensive understanding of the reasons behind the movement. Decentralization appears in many tints and shades and the factors responsible for it are at first glance all obscure and ramifying in nature. Aside from war shifts, which were abnormal movements that must be excluded for a sound perspective, decentralization falls into two general classifications, decentralization by top management to benefit its own business, and decentralization to balance our overall economy.

Here are a few case histories of companies that have launched decentralization programs in line with the first classification.

Johnson and Johnson, Inc., New Brunswick, N. J., began to decentralize years ago, the main reasons being to free the management of excessive paper work and to humanize the company. Each unit has about 200 employes, enabling the division manager to call the workers by name, which is a big asset in employer-employe relations. In big plants, employes are numbered robots. Johnson and Johnson increased production about 35 percent against a payroll increase around 32 percent. Results have been highly satisfactory with volume around 100 million dollars yearly. Each Johnson plant operates as if in business for itself, leaving management to concentrate on the really big problems of policy-making and promotion.

In the early 1920's, the Stillwater Worsted Mills, Inc., in New England, began decentralizing; they built three smaller plants in West Virginia, trained unskilled labor, and found that quality, quantity and costs in the smaller units were well in line with the big parent-plant.

The Textron corporation located sewing plants in a dozen or so small towns in New England, employing up to 150 workers, the plants operating in an old mill, an abandoned schoolhouse, a railroad station and other buildings available. Here too, output, quality and costs are equivalent to those in the large textile centers. Untrained rural help was employed at the start. In a short time, they caught on and developed adequate skill.

Munsingwear, Inc., is operating a number of midget plants, producing underwear, corsets, brassieres, and slips, with as few as 30 workers, in small towns around 1,000 population, and finds that small plants in small communities are practicable, that rural workers can be trained quickly if operations are reasonably simple and standardized.

The move to the country, under way in northern and southern communities, is to a degree esthetic, and in keeping with the movement of population to suburban sections, to get away from the grime of congested areas. This movement is confined to non-nuisance industries and research laboratories. Bell Telephone, du Pont, General Electric and Ford have established labs in less congested areas.

The General Electric Co. has plans for extensive decentralization, for small plants employing up to 1,500 workers. The management feels it can control operations better, lower costs, improve employer-employe relations and benefit workers socially and economically. In addition to GE, five other large companies, General Motors, U. S. Rubber, du Pont, Alcoa and Philco, are planning 83 branch plants, 60 of which will be in cities under 100,000. Up to now, decentralization has been more or less patchwork and the fact that managements are now planning it methodically indicates that businessmen are now beginning to consider the movement a fixed feature in our economy, and beneficial to free enterprise.

Sylvania Electric Products Co. has 20 plants operating on a feeder-plant basis, and since decentralizing from two plants with annexes, has reduced costs and improved output. Sylvania sets up parts and sub-assemblies in small "feeder" plants, then "feeds" them to finishing plants. Some managements are dubious about the workability of this kind of decentralization, but Sylvania has proven it practicable.

General Motors and other automobile manufacturers have been decentralizing for a long time. Largely concentrated in Michigan and Ohio, the industry has branch assembly plants and parts manufacturers in widely separated regions. As of 1943, General Motors had 115 plants in 46 communities in 12 states, 110 in the northern industrial states and 5 in the South. Ford at that time had some 20 plants in close proximity to Dearborn; Chrysler had 16 plants in the Detroit regions and 6 parts depots. Ford is decentralizing purchases. Top management will probably find that production functions are easier to decentralize than managerial functions, at least this has so far been the experience of those who have tried it.

Heavy industry is decentralizing. One company is looking for sites in communities up to 25,000 that are within spur track distance of its smelters. The chemical industry is beginning to fall in line. One concern has gone to West Virginia, bought 50 acres, will erect a sulphuric acid plant to sell chemical plants in the Kanawha Valley in this state, thus bringing production close to market.

Small business is also on the bandwagon. J. J. Marx, operating the So-Lo Works, moved his small plant from Cincinnati to Loveland, O., population, 1,820 people, and although income taxes and the cost of raw materials increased, he kept the price, quality and size of his products the same, increased wages from 37 to 65c an hour—yet his profits increased. Marx makes items for small home repairs.

There are some disadvantages to decentralization at this time. Suppliers find an outlying plant hard to reach. Educational and cultural facilities are below par, and it may be hard to induce outside workers to settle in the community. Such things will improve, however, if decentralization continues to pile up. The bad housing situation may give trouble, indeed, is holding up some planned decentralization now. One company located in Rochester opened a smaller plant in Buffalo to overcome a labor shortage, and, experiencing difficulty inducing outside workers to move to town because of the housing shortage, are considering building homes for workers. Because of high construction costs, most managements would veto this plan.

In some industries, a plant with too few workers cannot get costs down low enough to satisfy. Bond Stores, Inc., with a plant capacity of 5,500, opened a small plant in Newark, N. J., with 150 workers. They had difficulty keeping costs down. Bond, clothing manufacturers operating on low margins, has found that too few workers mean too high costs, and so, when decentralizing, plant capacity must be big enough to keep costs within the safety zone. Finding plants has not been a problem for many decentralizers, because they adapt old dance halls, schoolhouses and other available buildings, in one instance even an old funeral parlor. Setting up the machinery takes little time on standardized processes where small plants are established in small communities. Before making such a move, it has been found advisable to discuss the plan with various town groups and explain the company policy. In some instances, meetings have been held in grange halls or other suitable places, and the public invited.

On the favorable side, the worker can live for less, he finds it easier to get to the plant in a small community, which minimizes tardiness and absenteeism; property taxes are lower, hence the danger of labor trouble because of the high cost of living is minimized; the boss knows his workers by name instead of number; the surroundings are more healthful. Many factors that reduce the cost of living for the worker also reduce operating costs for the management.

The second classification of decentralization is the only worth-

Why Decentralization?

- ★ To improve employer-employe relations.
- ★ To give workers more "stay at home pay" and better living conditions.
- ★ To tap a bigger labor supply.
- ★ To solve labor and materials shortages problems and eliminate bottlenecks.
- ★ To solve production, distribution and management problems.
- ★ To combine the economies and advantages of big business with the flexibilities and humanities of small business.
- ★ To increase output and efficiency and to insure more stable production.
- ★ To effect better control of production and distribution costs.
- ★ To get away from congested centers.
- ★ To simplify plant and personnel management.
- ★ To prevent mergers and outgrowth of old facilities.
- ★ To establish parts depots and sub-assembly plants.
- ★ To enable top management to give full time to important phases of administration.
- ★ To insure more accurate costing standards.
- ★ To provide better facilities for new products, and for changes in supply sources, markets and methods.
- ★ To give employment in areas which contribute industrial business.

while one, say some economists and government planners — the balanced economy concept. None of the decentralization to date has been specifically planned to balance our economy. New industrial areas have been opened in the South and West, but the older sections are losing little ground. What the balanced economists demand is a break-up of the 11 northern industrial states where 65 percent of our manufactures are produced today, and the spreading around of manufacture in the West and South, which now accounts for approximately 20 percent. After the war they wanted the government-owned war plants frozen in these 11 states for an indefinite period, and federal aid, research and technological assistance given to encourage local industries in the South and West. They contend that centralization of industry in the present region creates a glut in the banks, forces cheap money, breeds statism and destroys free enterprise; that 75 percent of the income tax is paid by 46 million people crowding two percent of the national area; that depressions are felt most acutely in the industrial North because the cost of living is so high.

Some educators and economists contend that the small town is the salvation of free enterprise, each community a unit sufficient unto itself, with small plants in close proximity to farms and other supply sources, where the cultural advantages of the big cities can be combined with the wholesomeness of the small town and the greater opportunity for home ownership.

With government prodding, and with decentralization going on because management feels it a good business move, eventually we may get a balanced economy—some say in 15 years—and if so, this will affect the traffic picture. Decentralization will bring a change in the distribution of goods. New communities will demand continual shipments and the flow of traffic will change. The South and West, instead of shipping out mineral and agricultural products, will ship out finished products and bring in raw materials for process.

The airplane will accelerate decentralization because of its speed in transporting commodities to and from the wide open spaces. Expansion and improvement of inland waterways, now in process, will also play a part in decentralization.

According to the 1946 census, the South and West are undermanned, while the most populous states are along the seaboard and Great Lakes. The war shifted population to the West and South, but not at the expense of the industrial East, which is holding its own. The inland states have been the losers; thirteen have lost population since 1940. To achieve a balanced economy, each region must have ample manpower, and this would require a shift in population from the seaboard to the inland, a shift that should materialize if enough plants spread out inland.

A balanced economy may solve our boom-and-bust cycles, but the basic, big steel industry may make this goal difficult. As steel goes, so goes the country, and some experts say there may be a regional shift in this industry when the Great Lakes ore reserves are exhausted (and this can happen in not too many years). Then steel may move to the Atlantic Coast and import ore, a shift that could distort our economy, unless the balanced economists find a practical way to decentralize steel.

Many people confuse decentralization with a regional shift. They are not the same. Industrial shifts have been going on in this country since 1860. Then, New England turned out 25 percent of our production, New York, New Jersey and Pennsylvania, 39 percent, the North Central states, 15 percent. By 1939, shifts had changed these figures to nine percent for New England, 28 percent for the middle Atlantic states, and 32 percent for the 5 states north of the Ohio and east of the Mississippi. The iron and steel industry was a prime mover in this spread-out to the North Central states. Accessibility to high-grade ores, technological developments and availability of coking coals were main factors in the shift to the Northwest.

The shoe industry shifted from New England, once the shoe center, mainly to other northern states. Today, New England produces only 20 percent of our shoes, while about 12 percent of shoe production comes from Missouri. Some steel plants operate in Alabama, where local ores could be used after the open-hearth process was developed. Many cotton textile and many paper mills have gone south, 75 percent of active spindles are there; but despite these shifts southward, the balance of industrial power is still where it has always been, in the 11 northern states which turn out 65 percent of production and which received 60 percent of the war contracts. To date, regional shifts have relocated industry mainly in a limited northern area, and this movement differs from the current concept of decentralization in causes and effects, although in both movements, management may consider similar factors, such as proximity to operating requirements and markets, costs, etc.

The regional shift is forced by the economic "law of comparative costs," which causes industries to concentrate in certain regions, but these comparative costs do not remain fixed and when they change, industry is forced to shift to some other place where the cost of production and distribution permits the desired profit or survival. On the other hand, decentralization is not a migration forced by the "law of comparative costs," but is voluntarily sponsored by individual management for better employer-employe relations and other reasons which don't obtain in a regional shift.

Many state planning boards are promoting decentralization, Pennsylvania, New Hampshire, West Virginia and Oklahoma among them. From 1945 to 1947, the Quaker State reports that 464 plants decentralized, 314 of these domestic and 150 out-of-state. Also, 155 new companies opened up.

Decentralization is on. Where it will go from here no one knows, but top management should supplement this analysis with further investigation and conferences with production, sales, traffic and costing executives to determine the possibilities for company betterment in this movement.

Electric Eye Fire Detector

An entirely unique feature in the new Bekins Van & Storage Co. warehouse in Santa Monica is an electronic smoke detector device, which sounds an alarm at fire headquarters as soon as smoke issues from one of the 12-in. vents on the roof of this modern, 540,000 cu. ft. warehouse.

DEPT. OF TRANSPORTATION

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tion of the Executive Branch actually is not expected to confine itself to the technically defined executive agencies but is assumed to be considering all agencies, Congressional, judicial, and executive. The fruit of its two or three years of labor is expected to be ideal as well as practical. You can sense the direction of its thought in the fact that it has made the Brookings Institution the agency to study and draft its recommendations for transportation problems. We know the Brookings Institution leans towards an overall Department of Transportation. It is a keen and vital-minded organization of intellectuals, a group of carefully chosen Fellows from the universities, who live together across from the White House in a very solid and impressive structure, and function in a sort of scholastic serenity and tranquility, but who have turned out some very impressive studies which have profoundly affected the p o l i c i e s of government. The Brookings Institution is financed by a large fund bequeathed by Brookings, an Englishman, who became a naturalized citizen of the United States, and who made a very large fortune as the partner of Samuel Cupples, another former Englishman, founder of the Cupples Woodenware Co. in St. Louis.

In the years past an approach was attempted towards the consolidation now in mind when former Senator Wheeler of Montana tried to establish a Federal Traffic Bureau. Senator Wheeler had in mind the agencies which functioned on behalf of the army, navy, Treasury, and other federal units which used transportation in connection with the business of the government. It was Wheeler's idea that a central Traffic Bureau might eliminate overlapping and duplication, and effect economies, much as traffic bureaus operate in the interest of private business.

Later, after the Board of Investigation and Research published its study, a bill was introduced by Senator Lister Hill of Alabama. This bill also sought to establish what might be called a Department of Transportation. Essentially it would have accomplished what Senator Capehart seeks to do with S. 1812. Under the Capehart bill the ICC, the Civil Aeronautics Board, the U. S. Maritime Commission, the Office of Defense Transportation, the transportation functions of the Coast Guard, the Board of Engineers, the Public Roads Administration, and a number of other agencies, would come under the direction of a Secretary of Transportation. The law would set up the national policy in regard to promotional activities, such as the supply of financial assistance in the form of subsidies, and similar support; regulations in the interest of safety; economic regulations, such as control over rates; and research, technical, economic and legal. The Department of Commerce is convinced that there is an urgent "need for a rationalization of the entire transportation policy of the United States. The need is so clear that there is no reason for debate."

But Undersecretary Foster held that there should be very careful consideration of the question as to how the proposed law might be made more specific in its delineation of the national transportation policy; and how the legislation might be more specific in the delineation of the functions of the agencies whose independent status must be preserved. Mr. Foster also suggested that the agencies which deal with public utility functions of the government, such as communications and power, be placed in one department, separately. In his discussion the Undersecretary s a i d "Notwithstanding our sympathetic attitude toward the objectives of this legislation, we do not favor enactment of S. 1812, or any similar legislation, at this time. We believe that enactment of such legislation now would be premature. We base this conclusion largely upon the fact that the Commission on Organization of the Executive Branch and the Bureau of the Budget are both studying the reorganization of the government in general, including the reorganization of the transportation agencies. There is much to be said for deferring final action on this bill in order that such major proposal may be considered in the context of the proposed structure of the entire executive branch."

As might be expected, the majority of the primary transportation agencies of the government flatly opposed the establishment of the Department. It would obviously diminish their powers and reduce their size. Chairman Ryan of the CAB held that to place "air transportation under a multi-minded transportation department would, in the board's opinion, be a serious mistake. A single department might well create confusion and ambiguity as to channels and areas of responsibility without compensating benefit."

Chairman Smith of the U. S. Maritime Commission opposed the bill in these words: "The commission believes that the proposed merging of the Maritime Commission in a Department of Transportation, even though there is an attempt to preserve independence of regulatory power, is fundamentally unsound and directly inconsistent with the provisions and purposes of the Merchant Marine Act of 1936. The commission believes that it would be particularly unfortunate to provide for such a merger at this time. The Merchant Marine Act of 1936 was forged out of a long period of trial and experiment in the field of ocean shipping. Actually, it was just going into full operation when World War II began. Only a little over two years have passed since the end of that war; and the post-transition period, with its numerous and complicated problems, has not permitted a real test of the long-range peacetime operation of the Merchant Marine Act. It is

believed that a radical change in the administration of the act would jeopardize the successful operation of what is generally recognized as a fundamentally sound basic merchant marine law."

The Interstate Commerce Commission, which is fundamentally a juridical body in its functions, seldom expresses public opinions unless they are concerned with matters before its Commissioners for adjudication. Incidentally, despite the adversions of Senator Reed, of Kansas, who has constituted himself the critic of the ICC, this agency is probably the most highly respected of all the bureaus in the capital. It is human, and it apparently cannot avoid political pressures occasionally, but on the whole it is regarded as the fairest federal institution. It shuns the usual flamboyant publicity which is welcomed by almost every other agency, and it is greatly beloved by its own personnel. There is no other government unit which has such a loyal and devoted staff. In Washington it is regarded as a sort of accolade among government people to be connected with the ICC. Its champions have spoken for it in this debate about the enactment of S. 1812 and regard the suggested shift as tragic. They appear to think it would materially affect the usefulness of the commission, and that the action even might be unconstitutional. They have held that the ICC is so utterly independent that even Congress may not change its status. In other words, it is something above and apart from the Congress and the executive, and immune from their orders or direction. It appears that these apparently over-enthusiastic champions believe the courts could not touch the ICC. Obviously this contention seems illogical, and inconsistent with its existence as a part of the Congress itself. If the Congress cannot do with its own member what may be necessary in the public interest, the whole concept of law and order would seem askew. The position as postulated by its champions would make it seem to be a fourth dimension in the system which has hitherto been regarded as a government of three branches—legislative, executive and judicial. It is very likely that the Interstate Commerce Commission itself will regard this championship as embarrassing.

Col. J. Monroe Johnson, Director of the Office of Defense Transportation, unequivocally supports Senator Capehart's bill. He regards the creation of a Department of Transportation as long overdue. He believes if there had been such a department during World War II there would not be a freight car shortage now. He thinks if we have another war we could not "take it" for the lack of an overall agency in control of all transportation problems. He very candidly says that if we had had such an agency before World War II there would have been no need for the ODT. Discussing the national transportation policy declared by Congress in 1940, Col. Johnson says: "Congress has made it utterly impossible to adhere to the idea of preserving the inherent advantages of each mode of transportation, because it permitted 29 federal government

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come first page news, and the death of 71 passengers on the domestic, scheduled airlines in 1946 received much more newspaper space, proportionately, than the death of 34,000 persons on the highways.

There are many factors affecting the safety of life and property in air transport. Matters which in general would seem trivial can, with the right chain of circumstances, be the cause of a serious accident. By the same token, matters which seem to bulk large in the safety picture can, because of their general recognition and acceptance by all concerned, be a relatively unimportant factor in safety in airline operation. In other words, it is the exception instead of the rule that causes an accident.

The chief causes of recent air accidents appear to be as follows:

INADEQUATE LANDING AIDS AT AIRPORTS. Very little has been done during the past fifteen years to improve facilities for aircraft navigation close to airports and for landing during bad weather. A large number of accidents have resulted from pilots' attempting to get their planes on runways for landings from awkward approaches by the use of the antiquated aural method, without even a row of approach lights to outline the location of the runway and with inadequate runway marking and lighting. Other accidents can be indirectly attributed to the lack of adequate landing aids where pilots have attempted to obtain or maintain contact conditions rather than make an approach in such haphazard and precarious a manner as has been necessary at most terminals with the use of radio range stations in relation to the landing runways. Other accidents have been the result of pilots' attempting to make an approach and landing downwind or crosswind since most airports have bad-weather facilities for an approach only in one direction. Unless the aids to landing provide for at least two opposite direction approaches, a pilot during poor visibility weather and adverse wind must decide between two hazardous undertakings. He must either land downwind or he must circle the airport at a dangerously low altitude to get around into the wind for a landing.

INADEQUATE NAVIGATIONAL FACILITIES ON AIRWAYS. Accidents have been the result, particularly in mountainous terrain, of the lack of a positive radio track over the ground that can be easily followed during all types of weather conditions, particularly when there is considerable static interference. It is a credit to the airline pilots that there have not been more accidents, due to the improper location and inadequate installation of the simple, usable airway navigational aids that are available for present use. It seems that too often present available facilities have not been improved due to a continuing development program of new aids and the fact that there is always the prospect that a solution to the problems is "just around the corner."

FIRE IN FLIGHT. This has caused several serious accidents and one or two near-accidents with some of the largest type planes in airline operation. The causes of such accidents are various, but appear to be chiefly structural.

STRUCTURAL AND POWER-PLANT FAILURES. These occur infrequently and there is every reason to be proud of the job which our aircraft industry, both the aircraft and the engine manufacturers, has accomplished in this connection.

PILOT ERROR. This is a very difficult accident cause to describe. Pilot error must not be confused with pilot blame, because at times and under certain circumstances any human being may fall down on the job. Airline pilots, being human, make mistakes occasionally and sometimes the results are serious. However, in any accident the flat verdict of "pilot error" should not be applied without first taking into effect all extenuating circumstances. It should be realized that when an airline pilot departs he automatically assumes the ultimate responsibility for all mistakes made by practically everyone else in connection with the flight.

For example, if a careless agent loads the plane improperly so that it is completely out of balance, the pilot must absorb this error, and quite often do so on a difficult instrument procedure which could, under many circumstances, be problem enough with a properly loaded plane. If a mistake is made in dispatching, choice of alternate airports, estimation of gas necessary for a given weather condition, or many similar instances, the pilot must either catch the error at its source, which is invariably difficult and frequently impossible, or absorb the emergency created by the errors of others when the situation develops.

Airline pilots appear to have no desire whatsoever to dodge or avoid any of their final responsibilities. However, they do object most strenuously to the flat announcement of "pilot error" without having all extenuating circumstances and contributing factors taken into consideration.

There are many ways in which the safety of air transport may be improved, and the speed with which this takes place will determine to a very large extent how rapidly the United States will reap the fullest benefit from this facility and realize the fullest return from its already substantial investment in airways, airports and

New Warehousing Association

The New Jersey Refrigerated Warehousemen's Assn., a new organization in the warehousing field, held its first annual meeting in Atlantic City recently. The program consisted of presentations made by experts in the warehousing field and the election of officers as follows: Charles D. Watson, Glassboro Cold Storage Co., Glassboro, N. J., president; Conrad Proebstle, Atlantic City Ice & Cold Storage Co., Atlantic City, vice president; Herman Leyendecker, Haddon Cold Storage Co., Haddonfield, N. J., secretary-treasurer. New executive committee members are: John G. Hollmeyer, Seaboard Terminals, Jersey City, and Harold C. Emerson, Seabrook Co., Bridgeton, N. J., Mr. Emerson is also chairman, North Atlantic Chapter, National Assn. of Refrigerated Warehouses.

other civil aviation facilities. Important factors which will contribute to the rapid improvement of air safety appear to be:

1. The efficiency and ability of our airline operators.
2. Pilot skill, intelligence and psychology.
3. The design of commercial aircraft.
4. The soundness with which our system of air-navigation facilities is planned.
5. The speed with which technical improvements in air-navigation facilities are introduced, which depends in turn on (a) the rate of technical progress to the point where large-scale installations are justified, (b) the rate at which funds are provided for such installation.
6. The intelligence with which our safety regulations are framed and the efficiency with which they are administered.

The installation and use of various types of landing aids at airports will lessen the number of approach and landing accidents. The chief of such aids available today are:

1. Ground-supervised or instructed approach, known as GCA, based on radar, where an operator on the ground "talks" the pilot down through clouds until it is possible to see enough to land on a runway with which the plane is already closely aligned.

2. Instrument landing systems, known as ILS, whereby radio approach paths are set up to be followed by aircraft in landing. Here, also, the pilot has to see the runway to make his final let-down.

3. Fog dispersal devices which actually burn off fog above a runway so that it may be seen from the air by an approaching plane.

4. Ground lights bright enough to penetrate murky weather and so provide a lighted path on the ground to be followed by a pilot in approaching a runway.

Deficiencies in airway navigational facilities may be largely overcome by such devices as:

1. Television-radar navigation, commonly known as "teleran," which is intended to provide general navigation, traffic control, collision prevention, talk-down landing, pictorial landing, automatic flight weather map reception, and other information to pilots. The leading system of this nature does all this with "pictorial" means of presentation, a new concept in aircraft instrumentation. A comprehensive system of this nature has manifest advantages but, unfortunately, does not appear to be available for general use for a number of years.

2. Long-range navigation, commonly known as "loran." By this electronic method navigators on or over the sea or

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A BASIC COMPENSATION PLAN FOR SALESMEN

PART II

Mr. Coburn's compensation plan for salesmen guarantees an annual salary and pays bonuses based on the variance between budgeted and actual net profit or loss in each territory . . . Simple, fair and flexible, the plan may be used by any type of business.

By R. M. COBURN
Marketing Consultant

BEFORE further discussing the compensation plan for salesmen which was introduced to the reader in last month's issue, it might be well to ask a question: Why do we maintain these large distribution facilities with such a heavy overhead? The answer: because there is an extensive market for the goods we have to sell. The cost of supporting and operating those facilities must bear a direct relationship to the size and characteristics of the market. In the case of the subsidiary company producing only for the parent organization, outside of handling and possible storage charges, there would be 'no distribution expense, because there is for all practical purposes no market. No marketing effort, therefore, is required.

In an ordinary company whose market is divided into separate sales territories, remembering that the expense of maintaining and operating the facilities must vary directly with the size and characteristics of the market, there is a distinct relationship between the relative size and quality of each territorial market and the share of the distribution overhead it must support. In other words, each territory is a separate little business with its own market and must be treated accordingly.

The size of the territorial market can best be expressed as a percentage of the company's total market potential which is 100. For example, in the case of the two territories previously mentioned, A might have 10 percent of the market potential and B 20 percent. (This is quite possible.) In that event, of the $200,000, A should be charged $20,000 instead of $30,000 and B $40,000 instead of $12,000. It is conceivable that when charged by the market potential ratio method, B would show a net loss, whereas with the other it would show a spurious net profit.

The first step in allocating and budgeting expense to territories is shown in Exhibit III. With all costs channeled into six separate classifications, charged as previously described and demonstrated in Exhibit II, we are now ready to budget net operating profit and loss by territories.

Exhibit IV is a comparison of budgeted and actual sales, gross profits, total expense and net profits for 1939. It will be noted that the percentages of budgeted net profit do not follow exactly the percentages of market potential in every instance. That is because the proportionate expense of operating a territory does not necessarily parallel its percent of market potential. The variation will, therefore, affect its actual and ratio of net profit.

With all these data available, particularly the variance between budgeted and earned net profit dollars, we are ready to formulate a compensation plan.

It was noted earlier that in the computation of territorial net profit the salesmen were necessarily charged with various types and amounts of expense over which they could not exert any

control, even though, in the final analysis, it was only through their efforts that these expenses could be paid for.

Because bonus compensation was going to depend upon net profit variance over the budget and because of the large amount of expense uncontrollable by the salesmen, it was decided to pay each man a guaranteed yearly salary of $5,000 regardless of results. Analysis of past records indicated that it was a fair minimum income for the caliber of man needed, that it could easily be earned by a competent salesman and that the company could well afford to pay it for average performance. Risks of individual failure were minimized because market potentials were equitably distributed. Exhibit IV shows that even the least efficient salesman earned a net profit of over $7,000.

This industry was seasonal, with the larger part of the business coming in the latter half of the year. As a result, some territories, and this one in particular, had to be budgeted for a net loss during the first quarter and for a very small net profit during the second. Under such circumstances, and to provide for unexpected variances, all bonus calculations were made on a cumulative basis and payments were deferred until the end of the year. That was another reason for the $5,000 yearly guaranteed salary, Management accepted its share of the responsibility.

A monthly and cumulative summary of his bonus earned was given to each man. An interesting variation is shown (Exhibit V) in the first quarter which clearly demonstrates the equity of this type of compensation plan.

It was agreed that 20 percent of the increase in net profit earned over the budget was a fair bonus for the salesmen. But this territory was budgeted for a net loss of $4,200 for the first quarter of 1939. The actual results showed a net loss of only $3,016 or a performance of $1,184 over the budget. Since this plan compensates salesmen for results *surpassing* the budget, the salesman earned a bonus of $236.80 for the first quarter, or 20 percent of his plus variance of $1,184.

In the second quarter, however, he did not do so well, instead of producing a budgeted net profit of $400, he showed a net loss of $1,960, wiping out the former credit and creating a bonus deficit of $472 and a cumulative deficit of 235.60. If the bonus had been paid in cash at the end of the first quarter he would have been $472 in debt to the company. It was to avoid an unpleasant situation of this kind that the $5,000 minimum salary was agreed upon. And the decision was made to pay the accumulated bonuses at the end of the year. Slates were then cleared with no net deficits, if any, carried into the following year.

Shortly after the end of the year, four salesmen, having produced surplus net profits, received bonus checks as shown below.

Analysis of the other four territories revealed that they failed to meet their sales budgets and, with the exception of a $32 surplus margin for No. 6, they also fell

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CAR-STRETCHING

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locomotives which was 107.5 miles per day in 1940 rose to a peak of 124.5 miles per day in 1943. Since then it has declined to 122.8 in 1944, 118.4 in 1945 and 115.9 in 1946.

The daily average mileage of freight cars which was 38.9 miles per day in 1940 rose year by year to 51.9 in 1944, and then fell off to 49.3 in 1945 and 45.2 in 1946.

The average net tons of freight per freight train was 849 tons in 1940. In 1941 this figure rose to 915 tons, and then to a peak of 1,139 tons in 1944. In 1945 it fell to 1,129 tons and in 1946 to 1,086 net tons per freight train.

Railroads and shippers both can help by continuing their work in heavier loading of cars. General Order O.D.T. No. 18 and 18-A were at times burdensome, but nothing stretched car supply during the war as these orders and O.D.T. No. 1 did. Heavier loadings per car means larger ratios of payload to gross weight and more ton-miles of goods moved per freight train mile and freight train, locomotive and car hour.

The average number of tons per freight car in 1940 was 27.6 tons per car. This average rose to 33.3 tons per car in 1943. Since then it has declined, to 32.7 tons in 1944, 32.2 tons in 1945, and 31.3 tons in 1946.

Railroads can also assist in the improvement of car supply by selective placement of freight cars to industries, assigning to industries which have a large percentage of their total shipments to certain parts of the country, freight cars of railroads which serve those parts of the country, so that the industries can readily load the cars to destinations on these railroads.

It is difficult and sometimes impossible for industries to sort out freight cars for placement at particular loading spots within their plants in that the cars are placed by the railroads without reasonable assortment according to the places at which particular types and sizes of cars of the ownership can be loaded in the direction of home. The expense and delay incident to extra switching in order to spot the cars increase plant transportation costs and do much to offset the benefits to be derived from loading cars toward their owning railroads. The experience of the Car Service Division of the Association of American Railroads under the reinstated Car Service Rules program indicates that there are many cases in which industries as well as railroads, with very little, if any, extra trouble, can load cars so that they will go to their home roads or in a homeward direction.

One way in which all shippers can help each other and in the long run promote their own best interests is in reducing to the absolute minimum the detention of cars, particularly detention beyond free time for loading or unloading. Despite efforts of the Car Efficiency Committees, of the Shippers Advisory Boards, of the National Industrial Traffic League, of the Car Service Division of the Association of American Railroads, and of other carrier and shipper organizations, the average detention of freight cars is high. In April, 1947, it was 16.36 percent and in March, 1947, it was 16.77 percent. In April, 1946, it was even higher, 17.98 percent. The most recent available figure is that for January, 1948, when the average was 16.96 percent.

It does not appear that there are good reasons in times of freight car stringency why one car out of every six placed for loading or unloading should be detained beyond the 48 hours free time, particularly when cars are in such short supply. Demurrage charges do not compensate shippers who are deprived of needed cars, nor make cars available for the carriers to distribute equitably.

Shippers can do much to assist in the program of getting freight cars to the lines of the railroads which own them by organizing their shipping programs so as to follow scrupulously the plan of the Car Service Division of the Assn. of American Railroads. The observance by shippers of the practices recommended by the A.A.R.'s plan in the selection of empty cars for loading will prevent unnecessary empty car mileage and expedite the return of the cars to their home roads for major repairs and overhauling. If an empty car of a "foreign road" is selected to load to a destination on the foreign road or to a point on another road in the district served by that railroad rather than the loading of a freight car owned by the road on which the car is loaded at origin to a point on another railroad will reduce empty car mileage in two directions. If, for example, a shipper in Oklahoma located on the tracks of the Santa Fe loads a Santa Fe car to a destination in Georgia served by the Southern Railway rather than a Southern Railway car of the proper dimentions and type, it is doubly wasteful because the Santa Fe car will have to be returned from the destination point in Georgia to the Santa Fe Railway, and the Southern Railway car which might have been used for this movement will have to be sent without load to the Southern Railway.

Any program for the return of freight cars to their home roads must be built around a core of adequate service to shippers. Cars must be of the proper types and sizes for the shipments, although substitutions of sizes and types of cars can often be made without sacrificing service standards and without incurring penalty rates. Railroads can select cars of the proper types, sizes and ownership, within the limitations of the supply of cars available, if adequate notice is given the railroads' agents and the destinations to which shipments are to be made are given the agents at the time the cars are ordered.

Shippers can assist in the program and assist themselves by using cars of more plentiful types and sizes, if adequate for their shipments, so as to conserve high class box cars for the types of shipments for which such cars are indispensable; and by refraining

from loading high class box cars with shipments of commodities which will damage or contaminate the interiors of these scarce cars.

The Car Service Division of the Assn. of American Railroads suggests the following principles to govern shippers in the selection of empty freight cars for loading. The principles are in the order of preference.

1. Cars should be loaded and the shipments should be routed via owner roads whenever possible. This includes loading cars to points actually served by the railroad owning the car as well as points beyond the line of the owner railroad.
2. Cars should be loaded to the home district of the railroad owning the car—the general territory served by the car-owning railroad—even in cases where it is not possible to route the shipment via the line of the railroad owning the car in which the shipment is loaded.
3. Cars should be loaded to a district intermediate between the point of origin of the shipment,—and the home district of the railroad owning the car, so that the cars may be advanced toward their owning roads as directly as possible, thereby reducing, if not eliminating entirely, empty car mileage in getting the cars on their home rails. This is getting them "in the direction of home."
4. Cars should be loaded to points in a district beyond or adjoining the district served by the railroad owning the car, if none of the first three alternatives can be followed. The cars should not be loaded generally to a district further than a district next to the car's home district. This restriction does not apply to shipments which are routed for movement via the railroad owning the car. In such cases, there is no

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perishable because we can't put it in cold storage," is the way Stern & Co. president J. A. Stern puts it.

"Until we installed this procedure we were three days to a week behind on much of our delivering and on knowing what we were sending out, in dollar volume and in numbers. Now we are able to have all the stuff out the same day —and we know, sometimes before the deliveries are on the way, just exactly how much business we're doing and just what the picture is on the inventory.

"It has always been a case of time versus adequate inventory control, but now as volume goes up and tabulating takes over, we're on a daily basis—and volume can go up a long, long way without any increase in overhead."

Stern's time factor reference has to do with the problems that were formerly involved in their operations in getting control and sales analysis data through manual recapitulations. All of these are eliminated under the new procedure since the dealer order punched cards contain all the necessary information, and any desired recap can be obtained, usually in a matter of minutes, by a quick run-through of a batch of cards on the high speed sorter and the automatic tabulator.

Before further discussing the control, sales analysis data, time saving and economic advantages Columbia feels are available to the distributors through the new procedure, it might be well to briefly discuss the equipment and operations.

Remington Rand punch, sorter and tabulator are used (and on a rental basis that makes them available to each distributor at a monthly cost that is less than would ordinarily represent the salary of a junior clerk or bookkeeper).

At Stern & Co and the other distributors, there have been no increases in personnel; in fact, in some of the larger distribution operations savings may here be affected. For the most part the procedure is fully and smoothly operative after a week to 10 days of on-the-job training of existing personnel, regardless of business machine operating familiarity.

The customer invoice, daily recapitulation, sales analysis report, tabulating list, etc., shown here are a few of the forms used in the Columbia-Remington procedure. Their proper employment results in the elimination of unnecessary duplication of effort.

The *heart* of the Columbia-Remington procedure is the digit-covered 3¼ in. x 7⅜ in. punch card. As dealer orders are received they are routed over a coding desk for dealer, date, salesman, type of merchandise, selection, quantity and price class numbers.

After cards are punched they are merged with back order cards which have been pulled upon receipt of shipments from the factory. There is a punched card for each type of record selection or other type of merchandise on the dealers' orders. In cases where allocation may be necessary because the day's orders exceed stock on hand, there is one card punched for the allocated share and another for the balance to go on back order.

When the current and back order cards for the day's deliveries have been merged and grouped on the sorter, a daily recap or mortgage list is prepared on the tabulator. The cards are then sorted again, at the rate of 25,200 an hour, this time by individual dealer.

Next the dealer invoices are printed on the tabulator (at a rate of better than 100 entries a minute) with the selection listings in numerical order according to their coded designation. Sufficient copies are made in the one operation to provide the customer's invoice and checking list, the distributor's accounting record, and the picking list for the stockroom.

The punched cards are then used to tabulate the daily billing summary, giving the distributor a complete picture on the day's volume, items that should be reordered from the factory, and the backorder situation.

So much for the day-to-day procedure. Later, on a weekly, semi-monthly or monthly basis, the same cards are used in tabulating sales reports, salesmen's commission statements, reports to the factory on sales by town and country, and,

where the distributor feels it will be of value to the dealer (retailer), periodic lists of shipments to him and of items on back order. However, because there is sometimes a dealer tendency to arbitrarily cancel out back orders if he is actually faced with a long, detailed list, most of the distributors favor approaching this "service" with a good deal of caution.

Just what information the retail dealer may receive from his distributor in the form of periodic or special tabulated reports is being worked out by each of the wholesalers handling the Columbia line and installing the new procedure and equipment. But aside from any such detailed reports, there is much of merchandising and inventory control value that can be passed on by the distributors' salesmen after they have siphoned it out of the weekly or monthly reports and sales analysis discussions at sales meetings.

Under the Columbia-Remington procedure it is possible, usually in less than an hour, to tabulate a complete record on the movement of a selection or group of selections, either in the whole area covered by the distributor or by county or town. It's just as easy, too, to ascertain comparative sales for any segment of the line, or for any type of retail outlet, such as radio stores, record specialty shops, music stores, chains or department stores, etc.

Discussing the procedure from the dealers' as well as the distributors' standpoint, Stern adds this comment:

"Beyond the actual speed-up of service and the simplification of billing and other operations, the principal value to the dealer in the distributor's adopting of this procedure is in the rate-of-sale information the salesmen can give him, particularly in comparisons of his own sales with the territory or type of operation in the territory.

"From the distributor's standpoint, the transition from wartime allocation distribution to doing business today as the factories begin to ship from inventory instead of from production, has created tremendous problems—and over-

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HIGHWAY STANDARDS

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cific fields of endeavor. Motor truck standards are developed by the Motorcoach and Motor Truck Committee under the chairmanship of W. A. Mitchell, Spicer Mfg. Division, Dana Corp.; by the Commercial Vehicle Committee under the chairmanship of F. K. Glynn, American Tel. & Tel.; and by the Highway Research Committee with A. W. Wolf as chairman. Other committees carry out standardization which also pertains to motor trucks. Thus truck gears are made from steels which have been standardized by the Iron and Steel Committee; castings for various motor truck component parts are fabricated from standard metals developed by the Committee on Iron and Steel Castings. In addition to standardized engineering materials, SAE has developed standards for the following phases of motor truck construction, manufacture, and use: (1) Speedometers, engine mountings, piston rings and grooves as well as other units, parts, and fittings. (2) Glass, rubber, felt, and other fabricated materials. (3) Screws, rivets, bolts, and washers. (4) Procedures for testing and rating lighting equipment, engines, and other truck components. (5) Maintenance of motor vehicles.

Anyone who drives a vehicle, be it a jeep or a Mack truck, knows and appreciates the fact of standard tire sizes and tire rim dimensions. Whether a 700 x 20 8-ply truck tire is purchased in Kaukauna, Wisconsin or Keokuk, Iowa, be it a Goodyear or a Goodrich, expensive or cheap, it will have identical dimensions and will fit on the rim of the truck wheel. Similarly, this tire size will be guaranteed to sustain a tire load of 1650 lb. at 40 lb. inflation pressure, a 1775 lb. load at 45 lb. inflation pressure, and other specified loads. No matter how the tire rim is designed, it will furnish a perfect fit for the tire. This 700 x 20 8-ply tire will take a 700-20W tube and a 76A valve. Needless to say, all this integration and interchangeability didn't just happen . . . it represents a good deal of sweat and a good many standards. The group that is responsible for this standardization is the Tire and Rim Assn., Inc., which was founded in 1903. As relayed to the writer in a letter from the secretary of this association, TRA was founded for the "purpose of standardizing passenger car rim contours so that all makes of tires of a given size would be interchangeable on a given rim. Since that time [standards have been extended to include] other types of ground vehicles as well as aircraft." Members of this association include 22 tire manufacturers, 18 manufacturers of rims and wheels, six companies producing valves and allied parts, five foreign companies, and one trade association.

Needless to say, the materials used in truck and trailer body construction are "standard materials as established by the SAE and other standards groups" (quoted from letter written by leading truck manufacturer); however, the length, height, width, number of axles, and weight per axle of the vehicle are not standard.

Why such is the case is no deep, dark mystery: under present conditions, attempting to standardize the truck itself would be as futile as attempting to standardize the means by which state and local governments raise their revenues. One of the "weaknesses" of our form of government is the conflict that results from having 48 independent law-making bodies; yet, at the same time, this independence is one of the mainsprings of American strength. Each state has unique problems within its boundaries and unique conditions with which it must cope. A two-trailer truck is a commonplace sight in Nevada; in New York such a vehicle is as scarce as a taxicab on a rainy night. One need only visualize this sixty-foot giant in midtown Manhattan to appreciate why such a truck cannot be permitted on New York highways. A state with many narrow, curving roads could not, in deference to the safety of its motoring citizens, permit the operation of two-trailer combinations. Revenue needs and availability of revenue sources may cause one state to impose excessively high taxes on motor trucks whereas another state will not.

All these factors operate to hamper the standardization of motor trucks. Yet, strangely enough, the hampering factors are those standards which are embodied in various state regulations. Thus we have the anomaly wherein the force of standardization in one instance tends to inhibit standardization in another.

There are 48 individual standards bodies in this country plus one in the District of Columbia and one each in Alaska and Hawaii, which can and do impose restrictions on motor trucks and their operation. These bodies are, of course, the various state highway departments who have jurisdiction over state roads. These groups together with the U. S. Public Roads Administration are joined together in the American Assn. of State Highway Officials whose purposes in part, as quoted from their constitution, are "to foster the development, operation, and maintenance of a nation-wide integrated system of highways to adequately serve the transportation needs of the country . . . to develop technical administration and highway operation standards and policies." Within this organization is a Standing Committee on Standards which develops standards covering "all phases of road and bridge design, construction, maintenance, traffic requirements, roadside development, test and investigation of materials, and all phases of highway research." In this phase of their work, AASHO has done commendable work in lowering cost of highways and making possible better roadways through their finely developed standard specifications.

Insofar as the motor truck itself is concerned, the association

has worked with many other associations and trade groups to reduce lack of uniformity among various state regulations on dimensions, weights, and speeds of motor vehicles. An accompanying chart shows the recommendations made by the AASHO for 1932 and 1946. Needless to say, there is conflict between the state highway officials and those who manufacture trucks and trailers. One such manufacturer of trailers indicated in a letter to the writer the following as "what [they] consider to be a sensible, safe, sound "floor":

A VEHICLE SIZE-AND-WEIGHT CODE FOR PRESENT HIGHWAYS AND FOR THOSE TO BE CONSTRUCTED

Length, Single Vehicle	40′
Length, Combination of Vehicles	60′
Height	13′6″
Width (on designated highways)	8′6″
Weight per Axles	18,000 lb.
Number of Axles—	
Not more than 9—of which not more than 4 may be located within any 24 ft.	

The manufacturer adds: "Not only does our recommendation assure full use of our present highway system, but it provides highway engineers with a code on which they can base the construction of future highways. We can foresee no need for changes in it for years to come."

Needless to say, the situation at the present time is far from desirable from the point of view of standards of from any other viewpoint. Only when overall standard state regulations are in force will standard vehicle dimensions and weights be possible. The desirability of standardization in this phase of highway transportation in terms of lower initial and operating costs is obvious and need not be elaborated.

Truck lamps, directional signals and other safety equipment to be seen are the results of many hands joined together to establish workable standards. There are a wide variety of such standards available, both voluntary and regulatory, the latter usually being the legalized version of the former. For example, SAE standards and those issued by the National Bureau of Standards are embodied in the motor vehicle codes of many states. These codes include regulations not only for safety equipment but also for drivers and operation of vehicles. The guiding hand which aids in the formulation of these various regulations is the Assn. of American Motor Vehicle Administrators, which was organized in 1933 and is composed of chief officials having to do with the administration and enforcement of motor vehicle laws and regulations in each state and the District of Columbia, in each province of Canada, and similar divisions of Mexico and other American countries. The U. S. Public Roads Administration and the Bureau of Motor Carriers of the Interstate Commerce Commission are also members of AAMVA. This international group has among other purposes, the promotion of "(1) reasonable and uniform laws and regulations governing registration, certificates of ownership, driver's license, equipment and operation, and taxation of all vehicles, (2) standard and uniform practices of enforcement by police and uniform statutes as

to enforcement by judicial authorities, (3) traffic control standards."

Usually the standards issued by non-governmental agencies for safety equipment and safe operation of motor vehicles do not conflict with the requirements of most state laws. These standards are tabulated in the accompanying check list and because of space limitations, the sponsoring groups will be discussed in greater detail in a separate article on safety standards.

Government regulation of transportation is as old as the horse-and-buggy and quite often equally as obsolete. However, entry of the federal government into this field of endeavor came about in 1886 as result of the Supreme Court decision in the Wabash Case, where it was stated that if each state is "to establish its own rates of transportation, its own methods to prevent discrimination in rates, or to permit it, the deleterious influence upon the freedom of commerce among the states . . . cannot be overestimated. That species of regulations is one which must be . . . of a general and national character, and cannot be safely and wisely remitted to local rule and local regulations." The following year the Interstate Commerce Act was passed by the surprisingly large vote of 219 to 41 in the House and 37 to 12 in the Senate. Unfortunately, however, federal entry into the field of transportation control did not mean that state and local regulations made an exit. Just the contrary. State laws and local regulations, as we have seen, existed and flourished; federal laws grew with equal fecundity. In 1906 under President Theodore Roosevelt, the scope of the Interstate Commerce Act was expanded to encompass almost all types of interstate carriers and in 1935 the Motor Carrier Act vested in the ICC regulation of, among other things, the transportation of property by motor carriers engaged in interstate and foreign commerce.

The powers, duties, and functions of the ICC are widely misunderstood. The horns which many people attribute to the "old devil" ICC are to other persons merely

STATE SIZE AND WEIGHT RESTRICTIONS

STATE	HEIGHT	LENGTH			Maximum Axle Load in pounds	MAXIMUM GROSS WEIGHT IN POUNDS		
		Single Unit	Tractor Semitrailer	Combination		Tractor Semitrailer		Combinations
						Single Axle	Tandem	
Ala.	12' 6"	35	45	N. P.	18,800*	P 44,000	56,000	N. P.
Ariz.	13' 6"	35	65	65	18,000	44,000	68,000 (1	80,000
						44,000	69,600 T(1	85,000 T
Ark.	12' 6"	35	45	45	18,000*	44,000	56,000	56,000
Calif.	13' 6"	35	60 (2	60	18,000	44,000	68,000 (1	76,800
Colo.	12' 6"	35	60	60	18,000	44,000	68,000 (1	76,000
Conn.	12' 6"	45	45	N. P.	22,400	50,000	50,000	N. P.
Dela.	12' 6"	35	50	60	20,000 (4	48,000	60,000	60,000
D. C.	12' 6"	35	50	50	18,000	40,000	40,000	40,000
Fla.	12' 6"	35	50	50	18,000	40,000	60,000	60,000
Ga.	13' 6"	35	45	45	18,000	44,000	56,000	56,000
Idaho	14'	35	60	65	18,000	42,000	68,000 (1	68,000
Ill.	N. S.	42	45	45	18,000	45,000	59,000	72,000
Ind.	12'	36	40	40	18,000	40,000	40,000	40,000
	12' 6" T		45 T	45 T		44,000 T	56,000 T	56,000 T
Iowa	12' 6"	35	45	45	18,000	44,000	60,800 (1	60,800
Kan.	12' 6"	35	45	45	18,000	44,000	56,000	63,000
Ky.	12' 6"	35	45	N. P.	18,000	42,000	42,000	N. P.
La.	12' 6"	35	50	60	18,000*	36,000	69,000 (1	73,000
Me.	12' 6"	45	45 (3	45	22,000	50,000	50,000	50,000
Md.	N. S.	55	55	55	22,400 (5	52,800	63,750 (1	67,500
Mass.	N. S.	35	45	N. P.	22,400	50,000	50,000	N. P.
Mich.	12' 6" (6	35	50	50	18,000	44,000	72,000 (1	122,000
Minn.	12' 6"	40	45	45	18,000	44,000	60,000 (1	60,000
Miss.	12' 6"	35	45	45	18,000	44,500	45,000	45,000
Mo.	12' 6"	35	45	45	18,000	42,000	56,000	56,000
Mont.	13' 6"	35	60	60	18,000	44,000	71,900 (1	73,280
Nebr.	12' 6"	35	50	50	18,000	44,000	64,650 (1	64,650
Nev.	N. S.	N. R.	N. R.	N. R.	18,000	44,000	69,600 (1	76,800
N. H.	N. S.	35	45	45	18,000	47,500	47,500	47,500
N. J.	12' 6"	35	45	50	N. S. (7	60,000	60,000	60,000
N. Mex.	12' 6"	40	65	65	18,000	44,000	65,200 (1	70,500
N. Y.	13'	35	50	50	22,400	52,800	63,750	63,750
N. C.	12' 6"	35	48	48	18,000	42,000 (8	52,500 (8	52,500 (8
N. Dak.	12' 6"	35	45	45	18,000	44,000	60,000 (1	60,000
Ohio	12' 6"	35	45	60	18,000	44,000	66,000 (1	77,250
Okla.	12' 6"	35	50	50	18,000 (9	44,000	60,000 (1	60,000
Ore.	12' 6"	35	60	60	18,000	44,000	63,750 (1	71,250
Pa.	12' 6"	33	45	50	20,000	45,000	45,000	62,000
R. I.	12' 6"	35	45	45	22,400	46,000	46,000	80,000
S. C.	12' 6"	40	50	50	18,000	44,000	50,000	50,000
S. Dak.	13'	35	50	50	18,000	44,000	64,650 (1	64,650
Tenn.	12' 6"	35	45	45	18,000	42,000	42,000	42,000
Tex.	13' 6"	35	45	45	18,000	44,000	48,000	48,000
Utah	14'	45	60	60	18,000	44,000	72,250 (1	79,900
Vt.	12' 6"	50	50	50	N. S.	50,000	50,000	50,000
Va.	12' 6"	33	45	45 (11	16,000 (12	35,000 (12	35,000 (12	35,000 (12
Wash.	12' 6"	35	60	60	18,000	44,000	63,750 (1	71,250
W. Va.	12' 6"	35	45	45	16,000 to 22,000	40,000 to 52,000	80,000 (1	80,000
Wisc.	12' 6"	35	45	45	19,000	46,000	66,000 (1	66,000
Wyo.	12' 6"	40	60	60	18,000	44,000	65,800 (1	72,250

FOOTNOTES:

P —Maximum Practical Gross
T —Temporary
N. R.—No Restriction
N. P.—Not Permitted
N. S.—Not Specified
* —Based on Tire Size
1.—Formula computation based on 3 axle tractor tandem axle semitrailer
2.—Trailers limited to 35'
3.—Trailers limited to 26'
4.—Tandem axles limited to 18,000 lbs. each axle
5.—Tandem axles limited to 18,000 lbs. each axle if less than 50" apart
6.—Auto transporters allowed 13½'
7.—Restriction is on wheel load and is based on tire size
8.—Includes 5% overload allowance
9.—Vehicles manufactured and registered in 1947 or prior years not limited to 18,000, but may not exceed 47,000 unless 18,000 lb. limit is observed
10.—Buses allowed 35'
11.—Exclusive of couplings
12.—Highway department may designate road on which 18,000 pound axle loads and 40,000 pound gross loads are permitted.

Truck-Trailer Mfrs. Assn., Inc.

two straight halos. At any rate, haloed or horned, devil or saint, the Interstate Commerce Commission through its Bureau of Motor Carriers has a tremendously important influence on highway transportation. Contrary to popular belief, the commission has no control over the dimensions, weight, or size of highway vehicles. Through its own standards the ICC exercises control over safety accessories, lighting equipment, glass, brakes, horns, coupling devices, and emergency parts and accessories. The standards are rather general in nature and result in relatively few hardships for the carrier. Most of the prescribed equipments are standard motor truck accessories: almost all of them are required by the various state laws.

Similarly contrary to popular belief, the commission has no police power. An ICC inspector cannot stop a vehicle on the highways and cannot bring into court violators of the ICC rules or regulations. The inspector can only follow the vehicle until it stops, then call a state or local police official and request that the offender be brought into court. As with all federal enforcement agencies, ICC is so limited in its manpower that, should it wish to do so, it could not possibly spare the required manhours to enforce its safety standards and other of its standards embodied in the Interstate Commerce Act.

Again contrary to popular belief, ICC does not set rates for highway transportation. Instead, the carrier is required by law to file with the commission a schedule of rates for all commodities he is to carry. Only upon complaint of any interested party or if it is believed by the commission that the rates are unreasonable or unlawful, may ICC, after hearing, determine the rates which will be lawful. This is a far cry from rate setting. For the most part, rates filed with the commission by carriers are based on the "National Motor Freight Classification" published by the American Trucking Assns. This volume is based to a large extent on the similar classifications developed by the railroads during the fifty years they have been under ICC jurisdiction.

In addition to these activities, ICC regulations impose: (1) standards for consolidation, mergers, and acquisition of control over motor carriers, (2) standards for accounts, records, and memoranda, (3) standards for keeping statistical records and making reports, (4) standards for payment of charges, (5) standards for bills of lading, receipts, and freight bills, (6) standards for insurance, and (7) standards for drivers, operation of vehicles, reporting of accidents, inspection and maintenance of trucks, and hours of work. The commission exercises rigid control over the transportation and packaging of explosives. Standards for this phase of motor truck operation are developed by the Bureau of Explosives, a private agency working in close cooperation with ICC. The functions and operation of this bureau will be discussed in detail in the article on railroad transportation.

The many standards forces

(*Continued on Page* 120)

AIR CARGO PICKS UP

(*Continued from Page* 53)

the driver generally at his farthest point out when he begins the return trip, there is a minimum of lost time from any "doubling back" over the same route.

Between 3:30 and 4 p.m. each driver again phones the main office, for instruction for any last minute rush, emergency, or priority air freight pickups.

In the case of downtown pickups, a longer period of time is required to service the area due to inadequate parking facilities and congested traffic. This problem is met by assigning special drivers and vehicles who handle nothing but this phase of the operation.

At the central terminal, the outgoing shipments are sorted according to the designated carrier. Individual truck loads are delivered to the airfield office of the respective air freight carrier.

Constant vigil must be kept for new modern equipment. Increased efficiency in our own company has resulted from the installation in several trucks of mobile radiophone instruments which enable a two-way flow of instructions between the individual driver and the central terminal offices. Each time the phone rings in the truck, a red light flashes on automatically, remaining on until the received is removed. If the driver is away from his truck and returns to find the red light on, he knows he must call the central office for instructions. This equipment is extremely useful in handling rush calls. It has already played an important part in "saving the day" at several manufacturing establishments where shutdowns were imminent due to material shortages.

Design and construction features of motor vehicles have an influence on costs. Loss and damage are reduced, for example, by heavy rear panel doors which close and lock automatically. Loads are thus not left exposed when the driver stops for a delivery or pickup, and pilfering is prevented. The special doors are of four panel construction, eliminating the necessity of opening an entire rear door each time a package is handled. The strong piano hinging and the close fit of the doors further cut loss and damage costs by making a fine weatherproofing barrier.

A sliding panel door on the side facilitates movement in and out of the vehicle.

Choosing the proper personnel for the truck delivery fleet is important and effective in maintaining a smooth air-ground liaison. The drivers who meet the general public must be not only courteous and neatly uniformed, but must know air freight intimately so that they can double as salesmen for air freight where prospects are not yet acquainted with the value of this type of service.

Highway carriers of air freight must know at what points it is best to separate air freight from regular highway shipments. A separate bookkeeping system, for example, should be assigned to air freight billing. In our company, dispatchers handling air freight only work both in the central terminal and at the individual fields to route all shipments and to handle telephone calls and inquiries about incoming and outgoing shipments. Our central terminal has found it expedient, also, to maintain a special crew for night, Sunday, and holiday service.

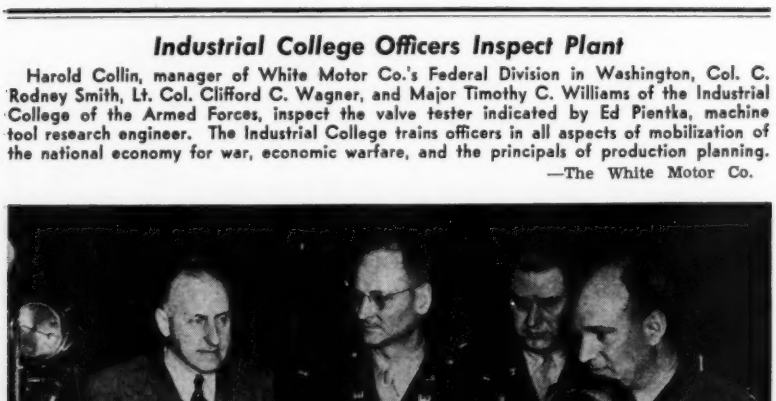
The combining of air freight with regular highway shipments for greater efficiency is illustrated in our pickup and delivery service. The use of only a few trucks assigned to specifically handle air freight pickup and delivery would place a heavy burden on those few trucks. They could not efficiently cover a large area. Using the company's regular routing system for air freight shipments is much more efficient, for any point can be readily reached by the trucks normally assigned to the particular route where an air freight delivery is to be made. It is certainly done as quickly, for while all regular deliveries are made by noon, a special truck handling only air freight might take an entire day to deliver its load.

One of the paramount factors in the harmonious team work of air freight and highway carrier personnel is a monthly meeting of airline officials and our personnel who handle air freight. At these meetings, problems, complaints, and operating procedures are thoroughly discussed, both from

Industrial College Officers Inspect Plant

Harold Collin, manager of White Motor Co.'s Federal Division in Washington, Col. C. Rodney Smith, Lt. Col. Clifford C. Wagner, and Major Timothy C. Williams of the Industrial College of the Armed Forces, inspect the valve tester indicated by Ed Pientka, machine tool research engineer. The Industrial College trains officers in all aspects of mobilization of the national economy for war, economic warfare, and the principals of production planning.

—The White Motor Co.



the standpoint of the airlines and of ground transportation. The suggestions for better service that come out of these meetings aid immeasurably in perfecting air-ground coordination.

Attacking from every possible angle—the driver, the equipment, the bookkeeping systems, the routing, and general personnel problems—the motor carrier can do much to remove the stigma of the tired anchor man. All shipments, whether large, small, or unusual, must be given equally efficient handling from shipper to consumer. Every angle must be covered in an effort to encourage further use of air freight.

Our organization sincerely feels that air freight has a glowing future, and with the proper support from ground transportation agencies, the degree of efficiency afforded the shipper should soon reach a point unparalleled by any form of modern transportation.

AIR DEVELOPMENTS

(*Continued from Page* 67)

ground can determine their positions accurately and quickly by means of radio signals transmitted from stations of known position, under almost any kind of weather conditions and at great distances from the transmitting stations.

When we take the long-range view, it becomes apparent that individual devices do not constitute a coordinated system for safe air navigation. Sometime in the early 1950's there will be an urgent need for substantial and comprehensive improvements. New types of aircraft will be introduced, and there will be increases in their speeds. There will also be more airports, and the complexity of traffic-control procedures will be greater. The alternative to the development of systems is the piling of device upon device, gadget upon gadget, always increasing the burden on the human crew of an aircraft. This burden has already become almost unbearable when one considers that in a DC-4 aircraft cockpit there are some 434 instruments and knobs. In this plane, the crew must use one set of instruments and knobs for en-route navigation, a different set of instruments and knobs for landing, and still different apparatus for obtaining weather reports and the like. As we make our mechanical and electrical machines more marvelous and complicated, we sometimes forget the unfortunate human being who has very much the same psychological and physiological limitations that he had a thousand years ago. The piling of device upon device represents unplanned evolution rather than a true systems solution, and may lead to serious consequences.

One test of an air-navigation system is its flexibility; that is, its capability of expansion with the growing needs of aviation and its ability to accommodate new classes of aircraft as they make their appearance. Traffic-control methods, segregation of responsibilities between ground personnel, and the efficient utilization of the already limited radio-frequency bands are further system aspects. Additionally, the system must realize that the human being is an integral part of the overall system, that his reaction time and skill and other psychological characteristics are just as important in determining the operation and safety of the aircraft as are the characteristics of individual navigation devices.

Transition to any new system of air navigation, its installation and adoption, must be a smooth and economical process. We must beware of extremes. If the new system were revolutionary, requiring its complete installation at all airports and in all aircraft before it could be used, then instantly obsoleting all previously installed equipment, transition to the new system would be impractical. If, on the other hand, the new system were designed for the easiest possible transition, we would find ourselves back in the old method of

Modern Design

This streamlined, special-built truck mounted on a Mack chassis, designed by Andrew N. Obes, MIT graduate and son of the head of Andrew Obes' Son, contract haulers for International Business Machines Corp., has several new features which make for quick and easy handling. The curved rear door can be raised to three positions and closed weathertight. A special flush-type lift gate is powered by a standard Anthony mechanism. A compartment over the cab holds special implements of the trade, padding, snatch blocks, wedges, line, etc.

piling device upon device, of taking little steps, each representing the easiest and cheapest choice at that time, but with the result that we end with a greater total expenditure and with an inadequate system. The path between the two extremes is the proper one.

Safety cannot be regulated into aircraft, but it must be developed into them. Each new accident or several accidents coincidentally occurring in close sequence should not be the signal for the issuance of additional federal emergency regulations. It takes years to develop a design for a large transport plane and safety must be developed consequently on a long-range basis, both by government agencies and manufacturers. Fire in the air, for example, may be reduced by: (a) Reduction to an absolute minimum of the inflammable fluids and materials used in aircraft; (b) the confining of such inflammable fluids as may be necessary to their proper systems; (c) minimization or elimination of ignition sources; (d) the construction of hazardous regions such that they will confine and withstand fire; (e) the incorporation of complete warning systems and practical extinguishing systems; and (f) provision for exact and rapid action on the part of plane crews in the event of fire in flight. Most of these preventives are matters of aircraft design and construction development.

As far as airline operating procedures are concerned, an effort must be made to keep regulation at a minimum so as to avoid confusion and disorder. The prime responsibility for the observance of good operating procedures must be placed with the airlines themselves. It appears that under the present maze of safety regulations an airline pilot approaching a terminal, where a serious weather situation exists, cannot say, "This is the procedure I will follow. It is the safest with all factors taken into consideration. It is within the limits of my equipment and also my own skill." Rather he must say this: "Is it legal? If I break this rule to safeguard my plane and my passengers and cargo, will I be able to justify it later so that I will not be grounded or fined? Will I have to attend a hearing? And, oh, yes! As an afterthought, is it safe?" The most important question is frequently last, when it should at all times be first.

Present air navigation and control facilities are not good enough to enable air transport to become a medium of mass travel and shipping. A portion of the responsibility for improvement belongs with the airlines, but they do not have the resources to handle the whole problem on the necessary scale, and a partial solution will not be the answer. The fundamental responsibility, therefore, devolves on the federal government, which already is inextricably involved in air transportation through its close control of air carrier activities and its operation of the airways. Congress must create a set of circumstances favorable to safety. This may be done through the appropriation of funds for adequate airway and airport development and air-traffic control as well as adequate aids for air navigation and their operation. It must, however, be borne in mind that this is only attacking part of the problem. For example, it is clear that only a minority of the fatal accidents occurring in the last ten years would have been prevented by ILS or GCA or a combination of both along with high-intensity approach lighting. As a matter of fact, such aids will probably be of more use in increasing the reliability of airline schedules than in bringing about safer conditions. However, certain accidents took place in the past which might have been avoided had these landing aids been available. Conversely, with such aids available certain future accidents may not occur at all, and the same may be said for other navigational aids.

Regulatory bodies, the Civil Aeronautics Board and the Civil Aeronautics Administration, should be clothed with sufficient powers to so regulate the standards of air-transport operators as to increase safety and assure its increasing development. It is futile to attempt to make any means of transportation safe by law alone. Law can only place the authority and set standards; law can only serve to prevent the cutting of corners by unscrupulous operators. In this connection, the same safety requirements should apply to both certificated and non-certificated air carriers of passengers. If passengers are carried for hire, there should be uniform safety regulations, no matter what the size of the aircraft used in rendering the service. It is the responsibility of Congress to see that the public, paying the fare and with little knowledge of what constitutes a legitimate "airline," be surrounded with the same safeguards no matter what type of carrier is patronized.

Other than the above, the air safety situation rests with the manufacturers, with the airlines and with their employes. Safety in the air is a combination of the proper equipment properly maintained, pilot skill and discipline, skillful dispatching and flight control, and adequate airway and airport facilities. Coupled with all these is the faith of the traveling and shipping public that whatever the equipment may lack in safety is assured by adequate organization and managerial policy to prevent accidents.

Western Packaging Conference

For the first time in the west, over 100 companies engaged nationally and regionally in the manufacture and distribution of machinery, equipment, materials, supplies, and services in the fields of packaging, packing and shipping will exhibit and demonstrate their products or services. The forthcoming First Western Packaging Exposition and the concurrent First Western Conference on Packaging, Packing and Shipping, to be held in the San Francisco Civic Auditorium, Aug. 10-13, is attracting strong interest and approval from western industry and business leaders, many of whom have attended eastern conferences, but who are anxious to bring to the west the knowledge of packaging trends so valuable to all industry.

COMMODITY and EXCEPTION

(*Continued from Page* 49)

forces, have a bearing on the making of diversified freight rate structures in the various sections of the nation. The detailed causes as to why the rate structure of the South may not be the same as that established for the Pacific Coast, or for the North, are manifold, but the foundation principles are present in all instances throughout the country."

"Are the class rates of the railroads and those of the motor truck carriers on a strictly corresponding basis?" Collins questioned.

McCormack shook his head and said: "Motor carrier class rates and ratings follow the rail plan of class rates and ratings, but the motor carrier class rates, particularly for the longer distances, are not as low as the rail class rates. An attempt by the motor carriers to meet the class rates of rail carriers on low-rated traffic for long distances generally results in unprofitable operations."[19]

"I assume that the value of articles has some bearing on the making of class rates," Collins remarked.

"It has," acknowledged McCormack, "and a very definite bearing, too. Many decisions in this field of inquiry have been made. As merely one illustration I refer to 227 ICC 263 in which the commission said: 'For freight ranging in value from 40 to 70c per pound, a rating of first class for less than carload freight is not unreasonably high.' But now let's pass on to another type of class rate designated as an exception."

An expression of surprise flashed across Collin's face. "What is an exception?" he exclaimed.

"An exception is in reality an amendment to the classification itself.[20] Classification exceptions generally consist of rules, many covering packing requirements, and of estimated weights, carload minima, and ratings. By such exceptions rates are afforded shippers which are more favorable than under the classification itself.[21] The true function of an exception is to remove articles from the classification and establish class rates thereon different from the normal class rates.[22] Exceptions to the classification ordinarily should be interpreted in the light of the classification.[23] Exceptions to the governing classifications, as well as commodity rates, are usually established only when there is a considerable volume of movement in particular channels.[24] Exceptions to the classification can not be considered as providing specific commodity rates."[25]

"With exceptions removing articles from the classification, are there not plenty of arguments between shippers and carriers as to proper application?" asked Collins.

"Yes, indeed," smiled McCormack, "because the intention of the tariff framer is not controlling.[26] Items in the tariff or exceptions and items in the classification are coordinate items, those in the tariff or exceptions remove the corresponding items from the classification, and this is so even when the items in the classification are more specific.[27] When an article is clearly embraced in a general description in an exception, the rate provided in that exception is applied, although there may be more specific description in the classification."[28]

Collins pondered Jack's statement a moment and then spoke: "From your explanation I understand that the clasification is the basis for class rates, and that exceptions take the place of the regular class rates, but in what way do commodity rates vary from these others?"

"Any given class rate," McCormack responded, "covers numerous articles grouped to a class. For example, all items in the classification which fall within first class would take such rates irrespective of the nature of the articles. But, a commodity rate is applicable only to an individual or particular commodity as it may be described in a tariff, from a definitely named origin or origins, to a definitely listed destination or destinations. Commodity rates as a rule are the outgrowth of special conditions.[29] They should be established as need for them arises.[30] They are ordinarily published to provide for movement of traffic believed to require a lower rate than provided by classification.[31] A substantial movement is necessary to warrant the establishment of commodity rates on a product.[32] Commodity descriptions must be applied strictly, and only the article or articles clearly embraced within the description can be considered as having been removed from the classification.[33] When several words in a tariff are followed by a clause which is applicable as such to the first and other words as to the last, the natural construction of the language demands that the clause be read as applied to all."[34]

"You stated that commodity rates are generally lower than class rates. Isn't that principle always followed when establishing commodity rates?" Collins wondered.

"For the most part, yes," McCormack answered, "but it is not obligatory upon the carriers to establish such lower rates.[35] Under appropriate conditions a commodity rate may be put into effect higher than the class rate."[36]

"That reminds me," observed Collins, "you mentioned that class rates apply to both less than carload and carload shipments. Does the same thing hold good in the case of commodity rates?"

"Yes," replied McCormack, "but to a far less extent insofar as less than carload consignments are concerned. On a comparative basis there are very few less than carload commodity rates, taking the country as a whole. There is no good reason for maintaining commodity rates on articles which move in small volume and in less than carload quantities.[37] Ordinarily, when reasonable class rates have been prescribed, the commission will not require establishment

of commodity rates on less than carload traffic.[38] Commodity rates applicable to less than carload traffic constitute a departure from the usual practice and their establishment should be required only upon a clear showing of compelling reasons.''[39]

''Do commodity rates conform to the scale of class rates?'' inquired Collins.

''In the main, yes,'' declared McCormack, ''but it all depends on the question at issue. To illustrate, I'll quote from a citation from a decision of the commission, 255 ICC: 'The specially constructed commodity rates on grain from different origins should not necessarily bear a uniform relation to the class rates. Relations to class rates have been frequently disregarded from origins to differently rated territories competing in common markets. A further complication is introduced by the participation of ocean routes.' ''

''In the making of commodity rates, is any stress laid on raw materials as compared with finished products?''

''It has long been recognized that a superior quality commodity may bear a higher rate than an inferior commodity,'' McCormack pointed out.[40] ''It is improper to make the rate on the raw product higher than on the manufactured product.[41] Generally rates on raw material should be lower than rates on products manufactured therefrom.[42] Such characteristics as being subject to higher minimum, loading materially heavier, being less valuable, and probably less liable to damage, have influenced the commission to prescribe lower rates on raw materials than on articles manufactured therefrom.[43] And a raw material must be just that because a product made from another product by a manufacturing process can not itself be correctly described as the commodity from which it is derived.''[44]

''You referred to minimum. Do you mean the minimum weight for a carload?''

''I do,'' maintained McCormack. ''I also should point out that the carload minimum weight or minimum charge for a carload shipment is a part of the carload rate. Under a class rate the carload minimum weight might be 30,000 lb., whereas for the same commodity, under a commodity rate, the minimum weight undoubtedly would be 40,000 lb. or more to compensate the carrier for the probable lower rate.''[45]

Speaking of a carload minimum weight, does the size of an article have any effect on the establishing of freight rates?''

''Of course,'' said McCormack. ''Ordinarily articles of unusual size or value require special equipment or handling, and rates thereon are usually somewhat higher than those on similar articles of normal dimensions or average value.''[46]

''Here's a tricky one, Jack. Suppose I ship a product which can be used for different purposes. Would shipments be subject to different rates depending on the use to which the product would be put?''

''Ronald, that question in one form or another has been raised time and again. The character of the article shipped, not the use to which it is put, determines the rate applicable.[47] The commission condemns the practice of maintaining rates on the basis of the use to which a commodity is put.[48] There is no better entrenched rule in the making of rates or ratings than the one that a commodity cannot be rated or classified according to the different uses to which it may be adopted.[49] Shipments should be accorded the rates published for the article shipped, whatever use the receiver may elect to make of the article.''[50]

''All of which indicates that the nature of a commodity determines the appropriate rate,'' Collins summed up.

''Exactly,'' chuckled McCormack.

''If that be so,'' challenged Collins, ''what happens in a situation of this kind? Take for granted that a processor or manufacturer buys a raw substance in bulk, or in large size sacks. All he does to the material is to clean it. He then packages it in small containers, for consumer use, and sells the product under a trade name. Note that the nature of the commodity has not been changed. Can the manufacturer obtain the same level of freight rates as applied on the raw material?''

McCormack laughed. ''That's a horse of another color. That whiskey is made from grain does not make the rates on cereal-beverage barrels applicable to whisky barrels.[51] In other words, a manufacturer's description of an article for sales purposes fixes its identity also for transportation purposes. If a manufacturer finds it advantageous to describe his products in a manner calculated to give purchasers the impression that it is a different and higher-grade article than it actually is, he cannot consistently complain if the carriers accept that description as basis for collecting freight charges.[52]

McCormack then went on to say, ''In regard to a manufacturer's or processor's buying a material in large quantities and selling it in small packages, some years ago a complaint covering such a circumstance was decided by the commission. The manufacturer purchased carload lots of farina in sacks, each containing 100 lb. of the material. The farina was then packed in small sized boxes which in turn were placed in fibreboard cartons for shipment, and sold as a cereal breakfast food under a nationally advertised trademarked name. The carriers charged freight rates on cereal breakfast food which were considerably higher than those on farina in 100-lb bags in carloads. The manufacturer contended that the farina rates should be used. The commission ruled against the manufacturer.''

''All of which indicates that the establishing of freight rates is a complex problem,'' admitted Collins. ''Now, before you leave, here's a final double-barrel poser. Would it not be feasible to apply strict mileage as the deciding factor in making freight rates, or could a plan be devised whereby rates would be adjusted to price changes in the commodity markets?''

''Freight rates depending solely on mileage would not be in the

public interest," McCormack asserted. "In a country as large as the United States, with its diversification of industry, commerce, agriculture, etc., over wide-spread areas, any radical, abrupt adjustment in the present structure of rates would be disastrous to the welfare of the entire nation. As to freight rates being tied in with commodity market prices, which are liable to change overnight, permit me to answer by quoting from 209 ICC 586: 'Railroad rates have never risen or fallen directly with commodity prices and the needs of commerce could not be met if rates for transportation were to fluctuate in response to changes in the prices of things transported.'"

[1] 253 ICC 623
[2] 37 ICC 726
[3] 148 ICC 285
[4] 164 ICC 1
[5] 208 ICC 321
[6] 225 ICC 500
[7] 225 ICC 500
[8] 203 ICC 393
[9] 211 ICC 365
[10] 164 ICC 1
[11] 173 ICC 332
[12] 148 ICC 457
[13] 48 ICC 312
[14] 253 ICC 241
[15] 258 ICC 471
[16] 211 ICC 692
[17] 256 ICC 99
[18] 43 MCC 189
[19] 24 MCC 501
[20] 222 ICC 409
[21] 204 ICC 595
[22] 232 ICC 593
[23] 216 ICC 135
[24] 93 ICC 400
[25] 171 ICC 756
[26] 43 MCC 323
[27] 43 MCC 323
[28] 43 MCC 323
[29] 213 ICC 297
[30] 83 ICC 399
[31] 95 ICC 181
[32] 113 ICC 487
[33] 201 ICC 506
[34] 253 US 345
[35] 32 ICC 247
[37] 89 ICC 131
[38] 209 ICC 635
[39] 109 ICC 211
[40] 2 ICC 389
[41] 219 ICC 767
[42] 218 ICC 783
[43] 255 ICC 239
[44] 183 ICC 183
[45] 26 Fed. Supp. 964
[46] 27 MCC 297
[47] 191 ICC 700
[48] 197 ICC 481
[49] 243 ICC 1
[50] 191 ICC 761
[51] 251 ICC 113
[52] 34 MCC 773
[36] 254 US 498, 65 L.ed. 372, 41 S. Ct. Rep. 151

Truck Leasing Questionnaire

TO correlate the industry's views on truck leasing, the American Trucking Assns. Truck Leasing Committee has sent out a questionnaire designed to gather detailed data on the subject. The issuance of the questionnaire was prompted by the evident intention of the ICC to adopt more rigid regulations on this industry, which it has for a long time felt has been subject to abuses.

The questionnaire sets forth its principles and seeks to arrive at agreement on ten types of leases: 1. from shipper to shipper, 2. from shipper to authorized carrier, 3. from authorized carrier to shipper, 4. from authorized carrier to authorized carrier, 5. from an individual (exempt carrier) to a shipper, 6. from an individual (exempt carrier) to an authorized carrier, 7. from an individual (independent contractor) to a shipper, 8. from an individual (independent contractor) to an authorized carrier, 9. from a leasing company to a shipper, 10. from a leasing company to an authorized carrier. Each of these combinations is considered by the committee from four standpoints: 1. long term lease with driver, 2. long term lease without driver, 3. short term lease with driver, 4. short term lease without driver.

DEPT. OF TRANSPORTATION

(*Continued from Page* 65)

agencies to have their hands in the pie. For instance, look at the section which encourages 'fair wages and equitable working conditions.' We all realize that different groups of employes from identical units or from different units have to go to their different boards of the government for adjustment of wages.

"When we stop to reflect upon the multiplicity of agencies which today exercise the almost uncountable controls over the overall transportation system of this nation, we must conclude that with so many government functions involved, there are hazards of serious, even dangerous, conflicts and extreme embarrassment to the transportation industry. Under these circumstances it is an impossible task to approximate the goal set in the policy as written by Congress.

"From my own experience as Director of the ODT, I know these harassments and conflicts exist in copious quantity, for I have had more difficulty in keeping these various governmental agencies in line and in their place than I have had in dealing with the countless difficulties arising from the operation of the various types of transportation. A Department of Transportation would cure these difficulties. Despite record traffic volume in 1947, every common carrier of persons and property in America, except buses and pipelines, is on the rocks. Our transportation would not be in such deplorable condition if we had established a Department of Transportation, for these dilemmas would have been presented at the cabinet table where they belong. The defect in administration today is that a number of agencies contemporaneously apply policies which generally relate only to one segment or a limited portion of the transport industry, and there is no overall agency or person with authority to coordinate these separate activities to the end that the national interest be best served.

"The proposed law, in my opinion, would not terminate the existence of the ICC, but would continue it within the department as an independent rate-making agency, with other functions reserved to it. It would not lose its identity as an arm of the Congress. Its charter would continue to be the Interstate Commerce Act, and the standards for its decisions would be the same as they are now. There would be no abatement in the rights of the parties in interest to have the decisions reviewed by the courts. That part of the ICC having to do with its quasi-judicial and quasi-legislative functions is, under the proposed law, to remain unimpaired. All its other functions should be transferred to a Department of Transportation for coordination with all of the like government activities in transportation. Without such a measure as this proposed law I am afraid the national transportation policy of Congress will continue to be little more than a pious expression of a laudable objective."

There is little likelihood the bill will be enacted, or even considered on the floor of the Senate in this Session. The critical times through which we are passing almost preclude the enactment of any legislation as highly debatable as S. 1812. Under normal circumstances, even, it is doubtful it would be reported out of committee with full approval.

COMPENSATION PLAN

(*Continued from Page* 69)

below their gross profit budgets. There was no question as to who had and who had not fairly earned a bonus.

Table III

Territory	Surplus Net Profit	Yearly Bonus
1	$9,401	$1,880.20
4	8,831	1,766.20
5	9,483	1,896.60
8	14,072	2,814.40
Total	$41,787	$8,357.40

In summary, there are a number of advantages in this type of incentive compensation plan compared with those whose chief or only concern is in sales. Briefly, some of them are:

1. *It is simple in concept and operation.* It pre-supposes, of course, effective flexible budgetary control. Since even the crudest rule-of-thumb management uses some kind of budgetary control, no matter how elementary or inaccurate, no new principle of administration is introduced. The fact is that the more progressive the management, the more meticulous it is in the quality of budgetary control it exercises. This plan was developed for that kind of management.

It is simple in that there is only a single figure which determines the bonus payment. With effective budgetary control in operation that figure is easily computed. It is simply the variance between the budgeted and actual net profit (or loss) for each territory.

Salesmen have no difficulty in understanding and following it, especially when they are consulted —as they should be—in the formulation of their own budgets.

Exhibit V
Territory No. 1
Bonus Calculation 1939

		Cumulative
1st Quarter		
Budget Profit (Loss)	$(4,200.00)	
Actual Profit (Loss)	$(3,016.00)	
Bonus (Penalty) Base	1,184.00	
Bonus (Penalty) @ 20%	$ 236.80	
2d Quarter		
Budget Profit (Loss)	$ 400.00	$(3,800.00)
Actual Profit (Loss)	(1,960.00)	(4,976.00)
Bonus (Penalty) Base	(2,360.00)	(1,176.00)
Bonus (Penalty) @ 20%	$(472.00)	$(235.20)
3d Quarter		
Budget Profit (Loss)	$ 12,900.00	$ 9,100.00
Actual Profit (Loss)	19,535.00	14,559.00
Bonus (Penalty) Base	6,635.00	5,459.00
Bonus (Penalty) @ 20%	$ 1,327.00	$ 1,091.80
4th Quarter		
Budget Profit (Loss)	$ 13,800.00	$ 22,900.00
Actual Profit (Loss)	$ 17,742.00	$ 32,301.00
Bonus (Penalty) Base	$ 3,942.00	9,401.00
Bonus (Penalty) @ 20%	$ 788.40	$ 1,880.20

2. *It is scrupulously fair to the company and the men.* As a general principle bonuses should be paid, not out of normal (or budgeted) profits but out of surplus profits. Since there are so many cost elements which salesmen cannot control, but for which they must earn the income to pay, incentive payments inevitably become a general management problem. For that reason a fair minimum salary should be guaranted to each man. That makes it incumbent upon management to keep the overhead down so that a net profit can be made from each territory.

3. *It is flexible.* Management has a choice of paying any percentage of actual net profits with or without regard for the budget; or it can restrict payments to an agreed percentage of plus variance. It also provides the best basis for bonus compensation for sales and other executives, since they can exert more control over cost elements than salesmen.

4. *It avoids the payment of bonuses for sales, the profitability of which is unknown.* In many instances it has been found upon

Exhibit IV
Territorial Operating Statements
Budget vs. Actual—1939

Ter.	Budget Sales	Actual Sales	Variance Over (Under)	Budget Gross Profit	Actual Gross Profit	Variance Over (Under)	Budget Expense	Actual Expense	Variance Over (Under)	Budget Net Profit	Actual Net Profit	Variance Over (Under)	% of Potent'l	Budget % of Net Profit	Actual % of Net Profit
1	$ 400,000	$ 436,650	$36,650	$124,000	$143,791	$19,791	$101,100	$111,490	$10,390	$ 22,900	$ 32,301	$ 9,401	14.3	14.9	18.1
2	353,000	324,950	(28,050)	110,000	105,555	(4,445)	91,100	93,090	1,990	18,900	12,465	(6,435)	12.6	12.3	7.0
3	286,000	264,635	(21,635)	88,000	80,733	(7,267)	71,800	73,550	1,750	16,200	7,183	(9,017)	10.2	10.5	4.0
4	370,000	399,350	29,350	115,000	131,871	16,871	93,400	101,440	8,040	21,600	30,431	8,831	13.2	14.0	17.1
5	364,000	386,150	22,150	113,000	126,683	13,683	92,600	96,800	4,200	20,400	29,883	9,483	13.0	13.2	16.8
6	339,000	332,750	(6,250)	105,000	105,032	32	87,500	88,790	1,290	17,500	16,242	(1,258)	12.1	11.4	9.1
7	333,000	313,200	(19,800)	103,000	101,263	(1,737)	83,700	82,940	(760)	19,300	18,323	(977)	11.9	12.5	10.3
8	355,000	390,315	35,315	110,000	130,072	20,072	92,800	98,800	6,000	17,200	31,272	14,072	12.7	11.2	17.6
Total	$2,800,000	$2,848,000	$48,000	$868,000	$925,000	$57,000	$714,000	$746,900	$32,900	$154,000	$178,100	$24,100	100.0	100.0	100.0

analysis that the sales of a number of "star" salesmen are definitely unprofitable to the company. This is particularly true when they are paid straight commissions on sales with or without incentives for volume.

5. *It pays each man the bonus he earns, based on his own performance.* If only one of them, through extra effort and good management, exceeded his net profit budget, he would earn a bonus even though all the others failed and the company sustained a net loss.

The success of this type of compensation plan depends upon the ability and the integrity of management. Its ability is demonstrated by its success in keeping distribution overhead to a standard minimum. With proper budgetary control that is not difficult. Since salesmen may not have access to the company operating statement, management must play fair in keeping net profit budgetary estimates within reason so that those who perform at maximum may be compensated accordingly. Any effort to gain a few extra dollars by penalizing the men with unreasonably high net profit budgets will inevitably defeat its own purpose.

Exhibit III
Classification of Expenses to Territories
1939

	Budget	% of Sales	% of Dist'n Exp.	Actual	% of Sales	% of Dist'n Exp.	Variance	% of Sales	% of Dist'n Exp.
Field Sales Exp.	$94,000	3.4	13.2	$94,700	3.3	12.6	$700	(0.1)	(0.6)
Advertising	150,000	5.4	21.0	150,000	5.3	20.3	....	(0.1)	(0.7)
Sales Promotion ..	60,000	2.1	8.4	60,000	2.1	8.0	....	....	(0.4)
Credit & Coll'n Acc't'g, Cler'l ..	32,000	1.1	4.5	36,790	1.3	4.9	4,790	0.2	0.4
Wh's'g, Shipping ..	108,000	3.9	15.1	121,350	4.2	16.2	13,350	0.3	1.1
Indirect Exp.	270,000	9.6	37.8	284,060	10.0	38.0	14,060	0.4	0.2
Total Expense	$714,000	25.5	100.0	$746,900	26.2	100.0	$32,900	0.7	

Tandem Tender on Tires

William Lux and partner Telford, Telford and Lux Drayage Co., Cincinnati, examine the scarcely-worn tires on their Fruehauf Gravity Tandem Trailer, which has logged 75,000 miles.

MODERN PORTS

(*Continued from Page* 30)

making for easy moving of freight between. Each of these warehouses is serviced by two tracks.

Two tracks also run down the middle of the pier shed. They are 1,025 ft. long and are depressed for convenience in moving freight. Two vertical lift bridges, housed in the steel superstructure directly overhead, expedite freight handling from one side of the tracks to the other, obviating the need of going around with heavy and frequent loads.

The 35 ft. aprons on either side of the shed are also serviced by two tracks each. Freight cars can be loaded or unloaded directly from or onto ships. Further to facilitate this operation, two 15-ton gantry revolving cranes are located on the upstream apron. Four motorized winches spot cars quickly and evenly. Extending above both sides of the shed, a line of cargo masts or "house falls" speeds the handling of freight between ship and the pier.

Safety is an important factor in Pier "N," and fire protection is rigidly adhered to. The pier is of fireproof construction throughout, and six fire curtains, extending from the roof to the bottom of the roof trusses, divide the shed into seven fire sections, which are protected by an automatic sprinkler system. Each warehouse is divided into four sections, separated by reinforced concrete fire walls. A fumigation plant, now under construction, will provide protection for buyers of commodities that require this service.

Although Pier "N" of the Norfolk and Western may be the most modern and largest facility of the Port of Norfolk, many other modern handling devices and methods, such as the modern, low-level, lake type coal pier 5, enable Norfolk to give today's fast 12 to 16 knot freighters the fast, efficient port services they need to put their speed to maximum use.

Getting down to *Cases*

By LEO T. PARKER
Legal Consultant

WAREHOUSING

Things You Can Do

YOU CAN avoid liability for theft or fire damage to stored goods by proving that a competent *inside* watchman was on duty when the loss occurred. Otherwise you are liable. In Ricks *v.* Culp, 206 S. W. (2d) 285, Tex., it was shown that a warehouse building was about 40 x 100 ft. and was filled with furniture (except for the aisles), stacked about six and one-half feet high. It was of brick construction and had only one window in the north end. There were several hand operated fire extinguishers in the warehouse. The warehouse company employed an outside watchman. This watchman was also employed to guard other premises. One night he made his regular inspection at 11:30 p.m., and when he made the next regular inspection at 2 a.m. the warehouse building was on fire. The owners of destroyed stored goods sued the warehouse company for value of the destroyed goods. The higher court held the warehouseman liable, saying: "The legitimate inference may be drawn that the fire smoldered for quite awhile before it was discovered; and that a competent watchman within the building would have discovered the fire in time, either to have extinguished it himself or to have turned in the alarm in time for its extinguishment by the fire department, and thus prevented the loss."

YOU CAN avoid liability for destruction of goods stored in your warehouse, if you prove that you conformed to legal rules laid down by a late higher court. For example, in Fields *v.* Gordon Warehouse Co., 203 S. W. (2d) 934, Tenn., it was shown that one Fields delivered to the Gordon Warehouse Co. a quantity of sweet potatoes for "curing, storage and safe-keeping." Subsequently Fields sued the warehouse, alleging that due to the negligence of the company's employes, the warehouse and the potatoes were destroyed by fire. This court held: "The warehouseman must erect a good building, reasonably suited and adapted for safe-keeping of the particular property intended to be taken care of (it need not be fire-proof), and he must keep it watched in proportion to the risks he is subject to, and the value of the goods with which he is likely to be intrusted . . . without incurring unjustifiable expense." Hence, if you conform with this legal rule, you can escape liability.

Things You Can't Do

YOU CAN'T reduce your income tax by making your wife a partner in your warehouse business. For example, in Benson *v.* Commissioner of Internal Revenue, 161 Fed. (2d) 821, it was shown that one Benson was engaged in the distribution of automobiles and replacement parts. From 1937 to 1940, he operated the business as a sole proprietorship under the name of Jacksonville Warehouse. On January 2, 1940 he deeded 46 percent of the ware house business to his wife and daughter. In his income tax returns for 1940 and 1941, Benson reported 54 percent of the income from the warehouse business as his own. His wife as trustee reported 46 percent for the trust. The higher court held that the *entire* net income from the warehouse business was taxable to Benson as the real owner and assessed deficiencies accordingly against Benson.

YOU CAN'T avoid liability for value of stored goods delivered to the owner, if you neglect taking a receipt, or other evidence. For example, in Cote *v.* Stafford, 51 Atl. (2d) 144, N. H., one Cote sued a bailee to recover possession of jewelry and other merchandise stored with the latter. Cote claimed that the jewelery was delivered by his wife in a box to the bailee for safe-keeping on the day that he was taken to a hospital. The bailee admitted receiving the box, but testified that he delivered it back to Cote, but neglected to get a receipt. The jury decided that the bailee had not given the jewelry back to Cote and held him liable.

TRANSPORTATION

Things You Can Do

YOU CAN recover damages *plus* rental value of a motor truck damaged by another's negligence. For illustration, in Knaus Truck Lines, Inc., *v.* Commercial Freight Lines, 29 N. W. (2d) 204, Iowa, it was shown that the road was icy and slippery and there was a heavy fog, mist and freezing rain. A truck driver named Mason thought it was too icy to continue and attempted to turn around and go back to the next town east. In the attempt the rear of the truck was over the center line of the highway. Another truck collided with it. The owner sued Mason's employer. In subsequent litigation the higher court held Mason's employer liable in damages and said: "Where a truck has been damaged so as to require repair, evidence of rental value of similar equipment is proper on issue of damages."

YOU CAN recover damages to a boat caused by collision with another boat if the testimony shows that you obeyed navigation rules. For illustration, in Hart *v.* Diesel Tug Brimstone, 163 Fed. (2d) 90, the "Brimstone," owned by the Diesel Tug Brimstone entered a channel and signalled for a port-to-port passage by blowing one whistle. Hearing no answer from a nearby boat, the "Fort Ash," the Brimstone later blew another one whistle, and finally an alarm, and commenced backing. Nevertheless the bow of a barge being towed by the Brimstone came into contact with the starboard bow of the Fort Ash. As a result of the collision the barge sank in her own fairway within a few minutes. In subsequent litigation the court held Diesel Tug Brimstone entitled to recover damages from the owner of the Fort Ash, saying "The Brimstone's signals and movements upon sighting the Fort Ash were entirely correct. Having signalled for a proper port-to-port passage, she thereafter kept to the starboard side of the channel."

Things You Can't Do

YOU CAN'T get a permit from a Public Service Commission based on the so-called "grandfather" clause if your hauling in the past was illegal. In Rowley *v.* Public Service Commission, 185 Pac. (2d) 514, Utah, a so-called "grandfather" clause stated that the commission must grant an application for a permit to any applicant who was a contract motor carrier on the 1st day of January 1940. The higher court refused to issue a permit to a carrier who was transporting merchandise illegally on this date. This court stated: "It seems more consistent with legislative intent to prefer the citizen who was legally operating his business, and to discourage the one who violated the law."

YOU CAN'T neglect collecting lawful freight charges. In Atlantic Coast Line Railroad Co. *v.* West Paving Co., 44 S. E. (2d) 523, N. C., the higher court held that a common carrier of freight must collect the full amount at the correct rate for transportation, and in event of undercharge, although due to negligent omission of a lawful charge or misquotation of the lawful charge, the carrier must exhaust all legal remedies and file suit, if necessary, to compel the shipper to pay the full amount due.

YOU CAN'T collect damages from an employer for an injury caused by your own negligence. In other words, when a *safe* method is readily at hand by which an employe may perform his work, and *of his own accord* he deliberately chooses to perform it in an unsafe manner, he may not complain because of injuries he received. For example, in Walley *v.* Williams, 28 So. (2d) 579, Miss., a truck driver claimed that he was directed by a foreman to fill the gasoline tank while the motor was running. A small quantity of gasoline missed the opening and was ignited by a jump spark, with the result that the employe was severely burned. The employe sued for damages. The foreman denied that he gave the employe such an order.

This court held that since the employe was negligently using an open-faced bucket to refuel the engine

while it was in operation, he must *prove* that he was ordered by his foreman to do so, otherwise he could not recover damages for the injury.

PACKING

Things You Can Do

YOU CAN have the exclusive right to use a trade-mark on goods you sell. See Nelson *v.* J. H. Winchell & Co., 203 Mass. 75, 23 L. R. A., N. S., 1150. This court held that an importer, jobber, or dealer may acquire and *exclusive* right to a trade-mark adopted by him alone for use wholly for his own purposes on merchandise he sells, but does not manufacture.

Things You Can't Do

YOU CAN'T have a receiver appointed without furnishing a bond. See Bell *v.* Bell Packing Co., 204 S. W. (2d) 527, Tex.

YOU CAN'T use a firm name similar to a competitor's name. For illustration, in Consolidated Home Specialties Co. *v.* Plotkin, 55 Atl. (2d) 404, Pa., the Consolidated Home Specialties Co. sued the Consolidated Home Supply Co. for an injunction against use of the name "Consolidated." This court held that the question as to the unfairness of competition in names is primarily whether the public is likely to be deceived. This court held: "This testimony shows that the tradename 'Consolidated Home Supply Co.' is so close an imitation of plaintiff's tradename to to confuse that part of the public dealing with these respective parties. The law will not sanction the assumption of a deceptively similar name in order that the appropriator may capitalize on the good will and reputation established by plaintiff company."

Also, see the case of A. Hollander & Son, Inc. *v.* Jos. Hollander, Inc., 175 A. 628, 633. Here the court enjoined Joseph Hollander from using his name "Hollander" as a component part of any trade or firm name where the use of his own name would deceive the public.

FINANCE AND INSURANCE

Things You Can Do

YOU CAN avoid paying taxes on income derived from insurance. In Independent Warehouse, Inc., *v.* Howard, 204 S. W. (2d) 810, Ky., it was shown that a warehouse and all equipment contained therein was destroyed by fire. The warehouseman collected from insurance company $24,274.64 as contractual indemnity for its loss. In making out the statement of income tax the warehouseman omitted the collected insurance. Suit was filed and the higher court held property destroyed by fire is neither sold nor exchanged and the proceeds of fire insurance are not taxable gains.

Things You Can't Do

YOU CAN'T prevent a corporation's being dissolved in which you own only a few shares of stock. For example, in Light *v.* National Dyeing & Printing Co., 55 Atl. (2d) 233, N. J., it was shown that the board of directors of the National Dyeing and Printing Co. determined that it would be in the best interests of all stockholders for the company to be dissolved, and its assets distributed to stockholders. In furtherance of this plan the board caused to be formed a new subsidiary corporation, and voted to transfer to that company, in exchange for all of its capital stock, certain assets of National Dyeing and Printing Co. used in connection with the company's textile dyeing and finishing business. Certain relatively small stockholders filed suit and asked the court to grant an injunction against dissolving the National Dyeing and Printing Co. The higher court refused to grant the injunction and said: "If he is not satisfied with the proposed action, he may, under the statute, have his stock appraised and receive, in cash, the amount determined to be the value of his stock."

MARKETING

Things You Can Do

YOU CAN use any trade-mark or tradename which does not unlawfully deceive the public, nor cause a competitor unfair financial losses. For example, in S. Buchsbaum & Co. *v.* Federal Trade Commission, 160 Fed. (2d) 121, the Federal Trade Commission sued the Buchsbaum Co. which manufactured various articles made from a plasticized, pliable, and resinous material resembling glass and known as "Vinylite." The commission alleged that this company was guilty of unfair trade practices in using the word "glass" when selling under the name "Elasti-Glass" such things as suspenders, rain coats, garters, belts, shampoo capes, watch straps, and the like. These items are made and sold at a much cheaper price than articles made of that kind of glass in which silica is an essential ingredient. The company's products are made of plastics and are quite pliable, tensile, durable and transparent. The higher court reversed the commission and held that the company could legally use the name "Elasti-Glass" in its advertisements and on its products.

Things You Can't Do

YOU CAN'T keep in your possession any merchandise or equipment not specifically included in your contract of purchase. For example, in Toledo Pipe Organ Co. *v.* Paradise Theatre Co., 28 N. W. (2d) 224, Mich., it was shown that in 1941 the Paradise Theatre purchased a building which contained a large pipe organ previously installed by the seller of the building at a cost of $175,000. The seller of the building had sold the organ to the Toledo Pipe Organ Co., which sent a crew of six men to the theatre to dismantle and remove the pipe organ. The purchaser of the theatre refused to let the workmen in to possess the organ. The Toledo Pipe Organ Co. sued the theatre owner for damages, based on unlawful detention of the organ. The higher court ordered the theatre owner to permit the organ company to gain possession of the organ and pay heavy damages.

Books and Catalogs

BULLETIN NO. 61, illustrates and describes nine types of standardized conveyor units, several of which are of recent design. Standard Conveyor Co., N. St. Paul 9, Minn.

DEVELOPING PUBLIC AND INDUSTRIAL RELATIONS POLICY, No. 140 AMA's General Management Series, 52-p. pamphlet, discussing labor relations, planning and research for top management, and the methods of policy formulation. $1. American Management Assn., 330 W. 42 St., New York City 18.

SAFETY, 20-p. illus. booklet, showing how to prevent and avoid accidents in a plant. Allegheny Ludlum Steel Corp., Public Relations Dept., Room 2036, Henry W. Oliver Bldg., Pittsburgh 22, Pa.

SIMPLEST BUSINESS SYSTEM, 20-p. illus. booklet, explains how to duplicate sales and service reports in 25 seconds, how to make prints up to 42 in. wide, any length, how to eliminate multiple posting in accounting work, how to prepare posters and displays without printing plates or engravings, how to make wiring diagrams, charts, in full color direct from pencil tracings, how to make stainproof, waterproof copies of testimonial letters, sales kit samples, how to duplicate photographs in less than 35 seconds, etc., by summing up what can be done in the business office by using translucent paper instead of the opaque kind for typing, drawing, writing or printing. Ozalid Div. of General Aniline & Film Corp., Johnson City, N. Y.

SOME BASIC TECHNIQUES IN MATERIALS HANDLING, 84-p. illus. book, reports the proceedings at technical sessions of the Conference on Materials Handling at Cleveland, last January; includes 19 papers, 15 pictures, 11 diagrams and four charts and tables. $1. Clapp & Poliak, 350 Fifth Ave., New York City 1.

WAREHOUSING IN WORLD WAR II, by Samuel G. Spear, at the direction of the American Warehousemen's Assn., Merchandise Div., 56-p. illus. book, provides an accurate historical record that would prove of value should any future emergency make necessary a mobilization of warehousing personnel and resources similar to that required in World War II; serves as a memento of a job well done to the warehousemen who played a part in the successful ending of World War II; recounts the story of an industry's all-out effort in support of its country. One to 24 copies, $1.50 each; 25 to 49 copies, 10 percent off; 50 or more copies, 20 percent off. The Traffic Service Corp., 418 S. Market St., Chicago 7, Ill.

WATER COOLER STORY, 28-p. illus. booklet, shows the importance of drinking water as a means of improving health, increasing production, and building good will; describes types of water coolers on the market today, offering factual advice on choosing the right type and number of water coolers to meet the requirements of various plants, offices, and other business establishments. Drinking Water Cooler Mfrs. Assn. a division of Refrigeration Equipment Mfrs. Assn., 1107 Clark Bldg., Pittsburgh 22, Pa.

People in Distribution

For our readers' convenience, items referring to one person only are arranged alphabetically according to the individuals' names. Company news or changes affecting more than one individual are arranged alphabetically by company names. Association items are similarly arranged.

Martin A. Boyle has been appointed sales manager of the Solder Div., Alpha Metals, Inc., Brooklyn, N. Y. Mr. Boyle, formerly sales promotion and advertising manager, has announced the appointment of the Senreb Sales Co., New York City, as sales representatives for the Alpha Solder Line. The Senreb Sales Co. will represent Alpha in the territories of New England, New York State and Northern New Jersey.

M. H. Brandt has been appointed manager of the Phila. branch of The Trailmobile Co. of Cincinnati, O.

John L. Cotter has been elected vice president and director of Bowen Products Corp. He is director of Graham-Paige Motors Corp., Crittall Manufacturing Co. and other corporations.

Byron E. Flechtner has been appointed director of regions for Plymouth division of Chrysler Corp.

Robert W. Kerr has been elected a vice president and director of The Bingham-Herbrand Corp., Toledo, O., manufacturers of brake lever assemblies and drop forged products. He will be associated with the Herbrand Div. of the organization at Fremont, O.

Fredrick Kohlenberger, who is president of Kay Moving Service, Inc., New York, was elected chairman of the board, Washington Heights Federal Savings & Loan Assn. of New York City.

John R. Marra has been appointed general manager of the Northeastern Dept. of Railway Express Agency, succeeding the late R. A. Cox.

James J. O'Neil, president of Lincoln Warehouse Co., has accepted the chairmanship of the warehousing division of the 1948 Joint Campaign of the New York City Cancer Committee.

Frank D. O'Sullivan, Jr. has been appointed southeastern regional manager, Crosley Div., Avco Manufacturing Corp. Mr. O'Sullivan will cover distribution outlets in Atlanta and Savannah, Ga., New Orleans, La., Charlotte, N. C., Memphis, Tenn., Jackson, Miss., Birmingham, Ala., and Jacksonville, Tampa, Orlando, and Miami, Fla.

Clarence G. Provost has been appointed manager of traffic in the forwarding and warehousing division of International General Electric Co., succeeding H. A. Baker, retired. (Vitkauskas)

A. F. G. Raikes has been appointed assistant director of sales in the St. Louis General Sales Office of Bemis Bros. Bag Co.

J. E. Sawtelle has been appointed manager of the Export Div., The Hinderliter Tool Co. Div. of the H. K. Porter Co., Inc.

John S. Seltzer, manager of purchases and stores during eight of his 24 years with the Westinghouse Electric Corp.'s Lighting Div. in Cleveland, has joined Jack & Heintz Precision Industries, Inc., Cleveland, as manager of customer service and stock control.

Walter A. Thomas has been named manager of Chapin Transportation Service, Walla Walla, Wash., which recently took over the Mayflower Agency. (Haskell)

Paul L. Tietjen, manager of the Interstate Steamship Co., Cleveland, a subsidiary of Jones & Laughlin Steel Corp., has, in addition, been appointed director of water transportation for the parent firm.

Admiral John H. Towers, USN (retired), has been elected assistant vice president of Pan American Airways.

W. Hamilton Walter has been appointed to the newly created position of coordinator of sales for the Raytheon Manufacturing Co.

E. G. Waring, who has been district manager for the Wells Fargo Carloading Co., Inc. has been promoted to manager of the Southwestern department of the company, with headquarters at Dallas. (Vitkauskas)

Rolf Wartenberg has opened his own freight forwarding and shipping service under the name of Terramar Shipping Co., Chicago. (Vitkauskas)

James G. Witte, who formerly directed the packaging activities of Montgomery Ward & Co., has announced his resignation to form the Witte Co., packaging consultants, with offices at Chicago, Ill.

Douglass R. Wood has been appointed executive representative in Havana, Cuba for Braniff International Airways.

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AEROIL Products Co. has named **M. M. Yarrington** as general manager and **Fred C. Wittig** as assistant general manager.

Bendix Aviation Corp. has elected **Clarence W. Avery** and **John M. Floyd** as directors. Mr. Avery is board chairman of the Murray Corp. of America, chairman and director of the Federal Reserve Bank of Chicago, and a director of Michigan Bell Telephone Co. Mr. Floyd is vice president and member of the board of directors of A. O. Smith Corp. Re-elected to the board were: **H. B. Baker, Paul H. Davis, M. P. Ferguson, W. H. Houghton, Ernest Kanzler, R. P. Lansing, Charles Marcus, E. R. Palmer, George A. Staples,** and **D. O. Thomas.**

Carnegie-Illinois Steel Corp. has named **Robert J. Dods** assistant traffic manager and **Harry L. Aufderheid** general traffic supervisor. (Kline)

Chicago and Southern Air Lines, Inc., has announced the resignation of **Pierre Villere** as director of public relations. **J. J. Shad,** director of station sales, will assume supervision of the public relations department. **Morris B. Baker** has been named as assistant to the director of public relations.

Eastern Air Lines, Inc. has appointed **William W. Russell** traffic and sales representative for the company in Wilmington, Del. **Andrew G. Diddel** has been appointed traffic and sales manager for the company in Detroit, Mich. **James T. Kilbreth, Jr.,** has been appointed traffic and sales manager for the company in Louisville.

Illinois Central Railroad has appointed **Carl A. Larsen** assistant freight traffic manager with headquarters at Chicago. **Ralph L. Andreas** was promoted to general traffic agent in the railroad's Chicago commercial freight office, and **Urbain J. Burvant** has succeeded Mr. Andreas as general traffic agent in charge of less-than-carload sales and service, with headquarters at Chicago. **Charles A. Sublett** has been appointed assistant freight traffic manager and **Howard S. Powell** has been named general freight agent, succeeding Mr. Sublett.

Lake Motor Freight Line, Inc., Port Clinton, O., has appointed **A. J. Angell** vice president in charge of operations and maintenance, and **Harold J. Worst,** vice president in charge of sales and traffic. (Kline)

Pillsbury Mills, Inc., Flour Milling Div., has promoted **Lief Hermstad** to assistant general traffic manager. **Norman B. Lindstrom** will succeed Mr. Hermstad as Minneapolis traffic manager.

The Union Pacific Railroad Co. has elected **W. Randolph Burgess** and **William C. Mullendore** to the board of directors. Mr. Burgess is chairman of the executive committee, National City Bank of New York. Mr. Mullendore is president, Southern California Edison Co.

The White Motor Co. of Canada, Ltd., has named **Bernard A. Gunn,** former secretary-treasurer, as secretary of the company. **Charles H. Miller** has been named manager of export coach sales. He was formerly export service manager.

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American Society of Tool Engineers has elected **Irwin F. Holland** as president, succeeding **W. B. Peirce** of Pittsburgh, who will remain as a member of the National Board of Directors. Other officers elected were **R. B. Douglas,** first vice president; **H. L. Tigges,** second vice president; **V. H. Ericson,** third vice president; **George A. Goodwin,** treasurer; and **W. B. McClellan,** secretary.

Industrial Packaging Engineers Assn., Michigan Div., has elected the following officers: **Harry G. Diefendorf,** packaging and materials handling engineer, president; **F. F. Holt,** G.M.C. Truck and Coach Div., General Motors Corp., vice president of

packaging; **J. Alex Gordon,** Gordon & Kinney, vice president of materials handling; **T. C. Lewis,** Micromatic Hone Corp., vice president of transportation; **R. B. Hiltz,** Hinde & Dauch Paper Co., secretary; **Edmund R. Meyer,** Ford Motor Co., treasurer; **C. E. Cox,** Gerrard Steel Strapping Co., chairman of the program committee; **I. E. Thomas,** Ford Motor Co., chairman of the membership committee; **V. Lee Edwards,** The Chas. A. Strelinger Co., chairman of publicity committee.

International Organization for Standardization has appointed **E. A. Pratt,** consulting engineer of New York City, as the representative of the ISO in its relations with the Economic and Social Council of the United Nations.

Lake Carrier's Assn. has discontinued its executive committee, but has named an advisory committee of eight to make recommendations of policy to the board. The association has re-elected **John T. Hutchinson** to a second term as president, and has accepted the resignation of **Louis C. Sabin** as vice president. Officers re-elected include **Lyndon Spencer** and **Gerald S. Wellman,** vice presidents; **Gilbert R. Johnson,** counsel; **Oliver T. Burnham,** secretary; and **Floyd J. Hollman,** treasurer. Elected to the advisory committee were **J. Burton Ayers,** Great Lakes Steamship Co.; **E. B. Greene,** Cleveland-Cliffs Steamship Co.; **A. H. Ferbert,** Pittsburgh Steamship Co.; **Elton Hoyt II,** Interlake Steamship Co.; **W. C. Jones,** Tomlinson Fleet; **J. H. Thompson,** M. A. Hanna Co.; **P. L. Tietjen,** Interstate Steamship Co., and **A. T. Woods,** Wilson Transit Co. New directors elected were **D. I. Dussing,** manager, Brown Steamship Co., Buffalo, and **F. G. Griffith,** assistant vice president, Wyandotte Transportation Co., Wyandotte, Mich.

Rocky Mountain Tariff Bureau has elected **I. W. Shepherd** of West Coast Fast Freight, Inc., and **Richard Reid** of Western Truck Lines, to the board of directors.

Truck and Warehouse Assn. of San Diego and Imperial Counties has elected **Virgil B. Bindle** as president. He is president of the San Diego Forwarding Co. Vice president is **Don J. Glardon,** partner, Arrow Transfer. **Russell S. Stowell** who owns Western Parcel Service, is treasurer.

Ohio State Industrial Traffic League has re-elected officers and directors, including **Mendel A. Keith,** who is traffic manager of the Columbus Coated Fabrics Corp., as president; **Ralph J. Joyce,** who is general traffic manager of Central Ohio Paper Co., as secretary, and **Dana B. Gee,** who is traffic manager of Capital City Products Co., as treasurer.

Youngstown Traffic Forum has elected **Kenneth Herriott** as president. He is president of the Herriott Trucking Co., East Palestine, O., and he succeeds **Fred W. Bennett,** manager of the Youngstown Chamber of Commerce Traffic Bureau. Other officers elected were: **C. F. Hoover,** as vice president. He is rate clerk of the Youngstown Sheet and Tube Co. **A. M. Broennle** is treasurer. He is traffic manager of the Truscon Steel Co. Secretary is **S. J. Gaster,** traffic manager of the Republic Rubber Div. of Lee Rubber and Tire Corp. (Kline)

DISTRIBUTION BRIEFS

Automatic Transportation Co., Chicago, manufacturer of electric industrial trucks, has named three firms as sales and service agents in five states. The George E. Miller Co., Watertown, Mass., handles Automatic products throughout Maine and New Hampshire, and in five northeastern counties in Mass. Freeman Industrial Service, Inc., Providence, R. I., has been appointed representative for Rhode Island and in five southeastern counties of Mass. Joseph J. McGarry directs Freeman's materials handling division. Vermont agent for Automatic fork trucks and motorized hand trucks is G. Cass Lightner, Thetford, Vt.

The Bethlehem Supply Co. of California has opened new general offices and established main warehousing facilities in the Vernon District of Los Angeles.

Food Machinery Corp., Riverside, Cal., has appointed the Material Handling Engineering Co. as Michigan representative for conveyor products. (Vitkauskas)

Garrick Industries, Inc., which offers a complete service in materials handling survey and design work, has been formed by R. Eric Friden and R. C. Garrigues, former industrial engineers and materials handling experts. (Vitkauskas)

Hewitt Rubber Div., Hewitt-Robins, Inc., has appointed the Penn Central Equipment Co. of Altoona, Pa., as a distributor of the entire line of industrial hose, conveyor and transmission belting and packing. The Penn Central Equipment Co. is owned by Paul R. Kuhn.

Highway Trailer Co. has opened a new sales and service branch in Des Moines, Ia. The branch will be in charge of J. L. Schroeder.

Island Equipment Corp., New York City, has negotiated for new and much larger quarters in which the general offices and factories will be consolidated. The new plant is the modern structure formerly occupied by Brewster-Rolls Royce organization, Long Island City, N. Y.

R. G. LeTourneau, Inc. has expanded its marketing program and has issued a clarification of its corporation marketing policy as it applies to recent product diversification. The company will organize a new group of specialized distributors to handle the new products, which include house building, materials handling, and heavy construction equipment. These firms will handle TOURNALAYERS, TOURNAMIXERS, TOURNACRANES, TOURNAHAULERS and other new products as they are developed by the company. Present LeTourneau distributors will continue to market TOURNAPULLS, TOURNADOZERS, CARRYALL Scrapers, ROOTERS and other similar type equipment.

Lykes Bros. Steamship Co., Inc. has established a Foreign Trade Development Div. J. R. Aston, former local manager of Lykes Caribbean Line in Houston, has been named manager of the new division, with headquarters in Houston.

Plomb Tool Co., Los Angeles, Cal., has added a warehouse at its Jamestown, N. Y., plant for stocking its complete line. This warehouse is said to reduce the shipping time to points east of the Mississippi River by one to 20 days and has speeded deliveries to other areas by relieving the main Los Angeles stockroom. The new warehouse, completed early in March, is a modern two-story structure—distinguished by large continuous windows for admitting natural light. The building is equipped with many new facilities, developed for efficient handling and packaging of tools.

Reynolds Metals Co., Louisville, Ky., has appointed two new distributors of its aluminum mill products as follows: The Hamilton Steel Co., Cleveland, O.; and the Arthur C. Harvey Co., Boston, Mass.

Stewart-Warner Corp. has appointed Alemite Co. of Montana, Billings, Mont., as distributor of products of the Instrument Div.

Transcon Lines, one of the "Big 4" truck lines operating between Los Angeles and the Middle West, has moved its general offices from Oklahoma City to Los Angeles. The new headquarters are located in the Bendix Bldg.

Washington Tug & Barge has been sold to the James Griffith interests. The tug and barge operation was established in 1909. The Griffith interests have installed Swan Nord as general manager. He was formerly vice president of Standard Oil, B. C. division. James and Churchill Griffith also will be active in operation of the firm. (Haskell)

West Coast Fast Freight, Inc. has received the ICC's permission to purchase the operating rights and certain property of System Freight Service for approximately $466,000. The authorization will result in an enlargement of the trucking concern's service wrich covers six western states.

OBITUARY

Franklin E. Blausey, 72, Redondo Beach, Cal., retired superintendent of distribution for Southern California Edison Co.; past master of San Pedro Masonic Lodge. (Vitkauskas)

Walter P. Dolle, 79, Cincinnati, founder of Fireproof Warehouse & Storage Co., Columbus, O. (Kline)

Walker C. Hay, Sr., 54, Oklahoma City, founder and president and general manager of Midwest Motor Carriers Bureau; member, Assn. of ICC Practitioners; member, Chamber of Commerce. (Risen)

William F. Johnson, district freight agent, Pacific & Atlantic Shippers Assn.; member, The Traffic Club of New York, Inc.

Clay S. Morse, 66, Dubuque, Ia., a pioneer in the moving and storage business in Portland in 1909, and since that date county commissioner. (Haskell)

F. J. Sweeney, secretary and treasurer, Terminal Warehouse Co., Phila.

PUNCH CARDS

(*Continued from Page 73*)

head is way out of line in most instances. Regardless of whether your item-by-item shipments to the retail outlet average five or 50, much the same internal effort is required, and there is a minimum worker requirement—so, to stay on the plus side, the distributor must have more sales through better service to his retailer customers, better turnover, or both."

Taking his cue from some of the big drug, chemical and food distribution operations, Lee Werblin, the Columbia methods engineer who conducted the two-year field study which led up to adoption of the tabulating sales analysis-inventory control procedure, has recommended to the distributors a rearrangement of their warehouses, so that all stock is placed in sequence to correspond with the code designations for each record, phonograph and accessory.

This was done by Stern & Co. during the pilot installation made there to iron out the kinks before the procedure was recommended to all the distributing outlets. Stern's uses a horseshoe conveyor to take the merchandise to the packing and loading platform and the record-phonograph-accessory division stock is grouped around this so that each picker operates with a minimum of lost motion. And the new procedure, incidently, makes it impossible for a picker to be choosey about the orders. He has to take them as they come, since there is no way he can bury a big one without jamming the works.

And there is no incentive or excuse for jamming under a procedure that Stern & Co. has found makes everything easier, faster and more satisfactory for all concerned.

CAR-STRETCHING

(*Continued from Page 71*)

restriction with respect to the destination of the shipment.

5. Preference should be given, as between available cars suitable for use, to the car that at the loading point, the point of origin, is farthest from its home road. Cars which are at junction points with the railroads which own them should be loaded via the line of the railroad owning the cars.

These rules are simple and if applied with discrimination and cooperation between shippers and railroads should be effective.

For the administration of these regulations to insure the return of cars toward their home roads, the territory of the United States and Canada is divided into 21 home districts:

Home District No.	*States Embraced*
1	Washington, Oregon and Idaho
2	California and Nevada
3	Wyoming, Utah and Colorado
4	Arizona and New Mexico
5	Montana, North and South Dakota
6	Minnesota, Iowa, Wisconsin and the Upper Peninsula of Michigan
7	Nebraska and Kansas
8	Missouri
9	Texas and Oklahoma
10	Arkansas and Louisiana
11	Illinois
12	Michigan, Lower Peninsula, Indiana and Ohio
13	New York, Pennsylvania, New Jersey and Delaware
14	Maine, New Hampshire, Vermont, Massachusetts, and Connecticut
15	Kentucky and Tennessee
16	Maryland, Virginia and West Virginia
17	North and South Carolina
18	Mississippi, Alabama and Georgia
19	Florida
20	Canada west of Sault Ste. Marie, Ontario
21	Canada east of the Soo

The principal railroads serving each of these railroads are shown in the accompanying map.

The railroads classified according to the home districts delineated in the map are shown in the accompanying table. The initials of the roads shown in this table are the railroads reporting symbols as shown in the Railroad Equipment Register which may be consulted by those in doubt.

Freight cars get around. As this is being written in the club car of the "Sunshine Special" en route to Texas, the train passed an industry on the Missouri Pacific System's line in Missouri. On the siding were seven box cars—a Canadian National; a Pennsylvania; a Delaware, Lackawanna and Western; a Soo Line; a Southern Railway; a Union Pacific; and a Missouri-Kansas-Texas Lines.

If this industry had seven outbound carload shipments requiring box cars of the sizes and types represented by these respective cars, for Dallas, Tex.; San Francisco, Calif.; Atlanta, Ga.; Duluth, Minn.; New York City; Pittsburgh, Pa.; and Montreal, Canada,—these cars should be loaded according to this pattern:

Shipment For	*Car to Be Used*
Dallas, Tex.	M.-K.-T.
San Francisco, Calif.	U.P.
Atlanta, Ga.	Sou.
Duluth, Minn.	Soo
New York, N. Y.	D.L.&W.
Pittsburgh, Pa.	P.R.R.
Montreal, Ont., Canada	C.N.

Public Warehouse Section

Warehousing is an integral part of distribution in several ways. Public warehouses are not merely depositories for the safeguarding of personal effects or industrial commodities; many are equipped to perform a wide range of services in addition to storage. Among these services are:

Bottling, boxing, financing, fumigating, grading, handling, hauling, labeling, motor transportation, mothproofing, moving, operation of public truck scales, quick-freeze facilities, rental of space for manufacturing, offices and showrooms, rigging, sales representation, sample distribution, sorting, stevedoring and various other functions for efficient and economical distribution.

This special advertising section of public warehousing has been consolidated for ready reference and maximum utility. It includes merchandise, refrigerated, household goods and field warehouses. For shippers' convenience, states, cities and firms have been arranged alphabetically.

The Pacific Coast Shippers Advisory Board estimates that freight car loadings for the second quarter of 1948 will be 426,364 as compared with 1947's second quarter loadings of 394,016, an increase of 8.2 percent.

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NEW YORK 16 — 271 Madison Ave.
KANSAS CITY 7 — 1104 Union Ave.

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SINCE 1900

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Warehouse & Distributing Co.

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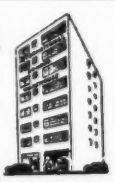

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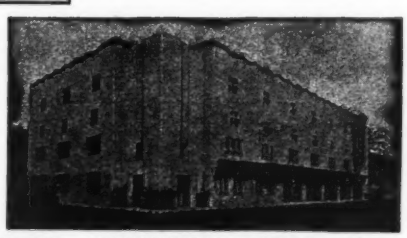

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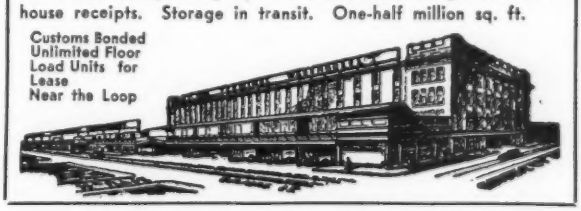

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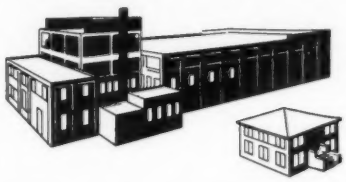

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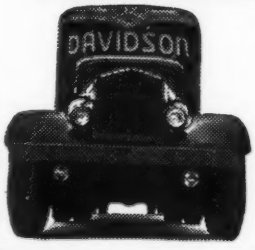

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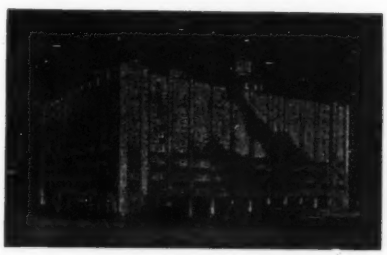

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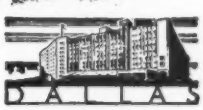

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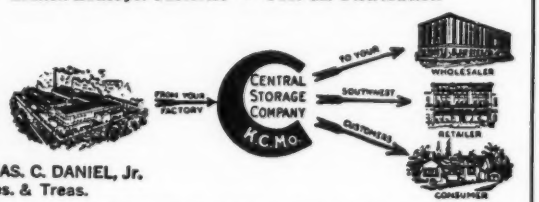

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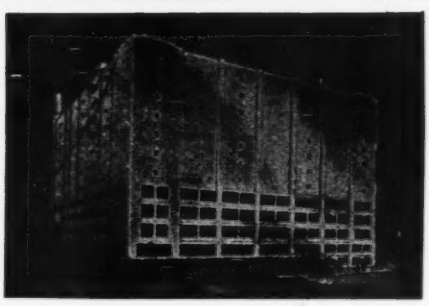

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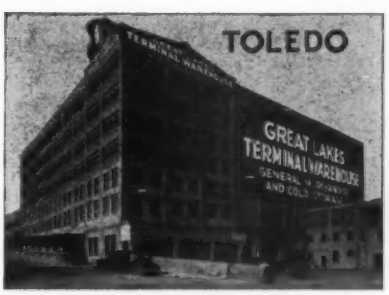

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GENERAL STORAGE
POOL CAR DISTRIBUTION
FREE SWITCHING—CITY TRUCKING

AMARILLO, TEXAS WM. C. BOYCE — J. A. BUSH

ARMSTRONG TRANSFER & STORAGE CO., INC.
103 SOUTH PIERCE STREET
Merchandise Storage & Distribution
Household Goods Storage, Moving & Packing
Long Distance Operators
Members: A.W.A.-A.C.W.-N.F.W.A.-S.W.T.A.-T.M.T
Agents—Allied Van Lines

BEAUMONT, TEXAS

TEXAS STORAGE COMPANY
656 NECHES STREET — BEAUMONT, TEXAS
Merchandise and Household Goods
Warehouse, Concrete Construction
30,000 Sq. Ft. Distribution of Pool Cars
Transfer Household Goods
Agent for A.V.L. — Member of N.F.W.A.—S.W.&T.A.

CORPUS CHRISTI, TEXAS

CORPUS CHRISTI WAREHOUSE AND STORAGE COMPANY
Located at PORT SITE
adjacent to docks NAVIGATION DISTRICT No. 1
Storage — Distribution — Drayage
MERCHANDISE EXCLUSIVELY
96,400 Sq. Ft. Sprinklered — Low Insurance Rates
Member: Southwest Warehouse and Transfermen's Assn.

DALLAS, TEXAS

GUS K. WEATHERRED, *Pres.*
C. E. BRADLEY, *Vice-Pres.*

DALLAS TRANSFER AND TERMINAL WAREHOUSE CO.

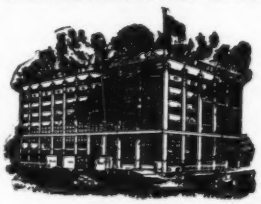
ESTABLISHED 1875
2nd & 4th Units Santa Fe Building, Dallas 2, Texas

Modern Fireproof Construction—Office, Display, Manufacturers, and Warehouse Space

Operators of the Lone Star Package Car Company (Dallas and Fort Worth Divisions)
H. & N. T. Motor Freight Line
Agents for Allied Van Lines, Inc.
MEMBERS A. W. A., N. F. W. A., American Chain of Warehouses Southwest Warehouse & Transfermen's Assn., Rotary Club

DALLAS, TEXAS

INTERSTATE-TRINITY WAREHOUSE COMPANY



301 North Market St., Dallas 2

Merchandise Storage and Distribution
Household Goods Storage
Moving & Packing
Long Distance Hauling

R. E. ABERNATHY, *Pres.*
J. A. METZGER, *Vice-Pres.*

Represented by ALLIED DISTRIBUTION INC.
CHICAGO 6 1520 NEWBERRY AVE. Mon. 5531 — The Distributors' Moss Group — NEW YORK 18 11 WEST 42ND ST. Penn. 6-0967

EL PASO, TEXAS

"Bankers of Merchandise" "Service With Security"

International Warehouse Co., Inc.

1601 Magoffin Ave. Inc. in 1920 El Paso, Texas

Lowest Content Insurance Rate

Fireproof Storage of Household Goods, Autos & Merchandise. State and Customs Bonded. Private Trackage—T. & P. and So. Pac. Rys. Pool Car Distribution—Motor Truck Service.

Members—NFWA—SWTA—Agent for AVL.

Represented by ALLIED DISTRIBUTION INC.
CHICAGO 6 1520 NEWBERRY AVE. Mon. 5531 — The Distributors' Moss Group — NEW YORK 18 11 WEST 42ND ST. Penn. 6-0967

FORT WORTH, TEXAS

In Fort Worth It's Binyon-O'Keefe

MERCHANDISE STORING—POOL CAR DISTRIBUTION

Our modern Centrally located warehouse is completely equipped to serve you with over 200,000 sq. ft. of merchandise and household storage space.

MOVING—STORAGE—PACKING—SHIPPING

Since 1875 **BINYON-O'KEEFE STORAGE CO.** Since 1875

800 Calhoun St., Fort Worth 1
Associated with Distribution Service, Inc.

FORT WORTH, TEXAS

Storage, Cartage, Pool Car Distribution

O. K. Warehouse Co., Inc.

255 W. 15th St., Fort Worth 1, Tex.

Agents, North American Van Lines, Inc.

HOUSTON, TEXAS

Member of A. W. A. — S. W. & T. A.

BUFFALO WAREHOUSE COMPANY

No. 1 MAIN STREET HOUSTON 2, TEXAS

Located in the heart of the jobbing district

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION

Lowest Insurance Rates Automatic Sprinkler Watchman

HOUSTON, TEXAS

POOL CARS OUR SPECIALTY

FEDERAL WAREHOUSE CO.

2001 NANCE STREET
HOUSTON 2

HOUSTON, TEXAS

New Location — Improved Facilities

BETTER WAREHOUSING IN HOUSTON

Our new warehouse is 800 feet long by 250 feet wide with car spot on the Mo. Pac. R. R. for 20 cars at one time. Plenty of truck dock space with wide area to maneuver trucks and trailers.

This modern one-story property with high ceilings and unlimited floor load capacity is fully equipped with modern materials handling apparatus.

HOUSTON CENTRAL WAREHOUSE and COLD STORAGE CO.

501 Middle Street Houston 1, Texas

HOUSTON, TEXAS

Houston Terminal Warehouse & Cold Storage Company

701 No. SAN JACINTO ST., HOUSTON 2

General Storage Cold Storage U. S. Custom Bonded
A. D. T. Service Pool Car Distribution
Office Space Display Space Parking Space
Lowest Insurance Rate

New York Representative Phone PLaza 3-1235
Chicago Representative Phone Harrison 3688

HOUSTON, TEXAS

PATRICK TRANSFER & STORAGE CO.

1117 VINE STREET, HOUSTON 2

Merchandise and Household Goods Storage
Pool Car Distribution

Sprinklered—A.D.T. Watchmen
Shipside and Uptown Warehouses
Operators—Houston Division Lone Star Package Car Co.
Member of N. F. W. A. — State and Local Assn's.

HOUSTON, TEXAS

W. E. FAIN, FOUNDER
W. T. FAIN, MANAGER

TEXAS WAREHOUSE COMPANY

Established 1901
Forty-Seven Years
Under Same Continuous Management

MERCHANDISE EXCLUSIVELY

Pool Car Distribution Sprinklered Throughout
A.D.T. Supervised Service

HOUSTON, TEXAS

UNION Transfer & Storage Co.

1113 Vine St. P.O. Box 305, Houston 1
Forwarding and Distributing

MERCHANDISE STORAGE

Warehouses Sprinklered Throughout
Supervised by A. D. T. Service.

SERVICE THAT COUNTS

HOUSTON, TEXAS

UNIVERSAL TERMINAL WAREHOUSE CO.
1002-1008 Washington Ave., Houston

Merchandise Storage—Pool Car Distribution—Drayage Service
A.D.T. Central Station Automatic Supervisory Sprinkler, Waterflow, and Fire Alarm Service
Watchmen, U. S. Customs Bonded, Office Space
Represented in all principal cities by
UNIVERSAL CARLOADING & DISTRIBUTING COMPANY
Division of
UNITED STATES FREIGHT CO.
Members State and Local Associations

HOUSTON, TEXAS

BENJ. S. HURWITZ, *Pres.*

WESTHEIMER Transfer and Storage Co., Inc.

2205 McKinney Ave., Houston 1
Since 1883

Merchandise & Household Goods Storage—Pool Car Distribution—Lift Van Service—20 car lengths of trackage.
Fireproof Warehouses—A.D.T. Automatic Fire and Burglary Protection
Agent for Allied Van Lines, Inc. Members N.F.W.A. State and Local Assn.

LUBBOCK, TEXAS

P. O. Drawer 1680.

WEST TEXAS WAREHOUSE COMPANY

Licensed and Bonded Warehouse
250,000 sq. ft. sprinklered space.
25-Car spot on Santa Fe RR.
Concrete floors, modern equipment.
Truck Loading Docks. Space for lease.
MEMBERS SOUTHWEST WAREHOUSE & TRANSFERMEN'S ASS'N

SAN ANTONIO, TEXAS

Merchandise **MERCHANTS** Household Goods

TRANSFER & STORAGE CO.

Merchants & Transfer Sts., San Antonio 6
Complete Storage and Distribution Service
Over 50 years of satisfactory service
Member of A.W.A.—N.F.W.A.—S.W.A.

SAN ANTONIO, TEXAS

Agent for Allied Van Lines, Inc.

Scobey Fireproof Storage Co.

311-339 North Medina St., San Antonio 7
HOUSEHOLD — MERCHANDISE — COLD STORAGE — CARTAGE
DISTRIBUTION
INSURANCE RATE - - - 10c
Member of 4 Leading Associations

SAN ANTONIO, TEXAS

MEMBER

SOUTHERN TRANSFER & STORAGE CO.

P. O. BOX 4097, STA. A, SAN ANTONIO 7
Specialists in Merchandise Distribution
FIREPROOF CONSTRUCTION
BONDED STORAGE

TYLER, TEXAS

IRA P. HILDEBRAND, *Owner & Manager*

HILDEBRAND WAREHOUSE COMPANY

Bonded under the Laws of Texas
General Storage and Distribution from the Center of East Texas. Specializing in Pool Car Distribution and Merchandise Warehousing

WICHITA FALLS, TEXAS

POOL CAR DISTRIBUTION
Since 1920

TARRY WAREHOUSE & STORAGE CO.

Wichita Falls, Texas

OGDEN, UTAH

MEMBER OF A.W.A.

WESTERN GATEWAY STORAGE CO.

GENERAL WAREHOUSING
POOL CAR DISTRIBUTION
MERCHANDISE AND COLD STORAGE

SALT LAKE CITY, UTAH

CENTRAL WAREHOUSE

520 West 2nd South St., Salt Lake City 1
Fireproof *Sprinklered*
Merchandise Storage
Pool Car Distribution Office Facilities
Member A. W. A.

SALT LAKE CITY, UTAH

Merchandise Storage and Distribution

Over 1,000,000 cubic feet reenforced Concrete Sprinklered Space
Insurance Rate 11 Cents

CORNWALL WAREHOUSE CO.

353 W. 2d South St., Salt Lake City 1
Represented by
ALLIED DISTRIBUTION, INC., and
DISTRIBUTION SERVICE, INC.
New York-Chicago-San Francisco

SALT LAKE CITY, UTAH

Merchandise Storage—Pool Car Distribution

KEYSER MOVING AND STORAGE CO

328 West 2nd South, Salt Lake City 1
Established 1910
72,000 sq. ft. space. Reinforced concrete and brick. Central location. Systematic delivery service. A. D. T automatic burglar and fire protection. Office and desk space. *Member-AWA-UVL-UWA-AWI*

SALT LAKE CITY, UTAH

"Serving the Intermountain West"

SECURITY STORAGE & COMMISSION CO. Inc.

230 So. 4th West St., Salt Lake City (1)
Warehousing-Distribution service since 1906
Represented by American Chain of Warehouses
New York (17) 250 Park Avenue — Chicago (4) 53 W. Jackson Blvd.
Member of American Warehousemens Association

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Household • Automobile Storage • Merchandise

NEW-BELL STORAGE CORPORATION

22nd St. & Monticello Ave.
NORFOLK 10, VIRGINIA
MODERN SPRINKLER EQUIPPED WAREHOUSE
50,000 SQUARE FEET PRIVATE RAIL SIDING
Lowest Insurance Rate in Norfolk. Pool Car Distribution
WE SPECIALIZE IN MERCHANDISE STORAGE AND DISTRIBUTION
AGENTS AERO MAYFLOWER TRANSIT COMPANY
Member M.W.A. & A.T.A.

NORFOLK, VA.

STORE and DISTRIBUTE
IN THE PROSPEROUS TIDEWATER AREA THRU PRUDENTIAL
HOUSEHOLD GOODS MOVED, PACKED, SHIPPED
POOL CAR TRANSFER TRUCKING SERVICE
LARGE FIREPROOF WAREHOUSE
OPEN YARD STORAGE AVAILABLE
LOCATED ON N. & W. SIDING

PRUDENTIAL STORAGE and WAREHOUSE COMPANY

Billings St. at N. & W. Ry.
P. O. Drawer 1859 — Telephone 22481 or 54008

NORFOLK, VA. Established 1892

SOUTHGATE STORAGE COMPANY, Inc.

239 Tazewell St., Norfolk 10

For economical storage and distribution you will want to know more about our individualized services. Our fireproof warehouses are in the Southgate Terminal, on the waterfront and in the center of Norfolk's wholesale district. Served by all rail, water and motor lines.

MEMBER:
A.C.W.
A.W.A.
S.W.A.
U.S.C. of C.

Write for Booklet—"7 POINT DISTRIBUTION"

NORFOLK, VA.

Fine Warehousing Since 1914

Security Storage and Van Co.

500-530 FRONT STREET

COLLECTIONS • POOL CARS • DISTRIBUTION

MOTOR VAN AND LIFT VAN SERVICE

Member—Nat'l. F.W.A.—Allied Van Lines

RICHMOND, VA.

70 Years of Uninterrupted and Expert Service

BROOKS TRANSFER and STORAGE CO., Inc.

1224 W. Broad Street, Richmond 3, Va.

Three Fireproof Storage Warehouses—810,000 Cubic Feet Floor Space—Automatic Sprinkler System—Low Insurance Rates—Careful Attention to Storage—Packing and Shipping of Household Goods—Private Railroad Siding—Pool Car Distribution—Motor Van Service to All States—Freight Truck Line. Member of N. F. W. A. — A. T. A.

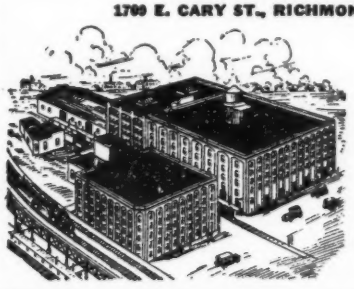
Agents: United Van Lines, Inc. serving 48 States and Canada.

RICHMOND, VA.

Established 1908

VIRGINIA BONDED WAREHOUSE CORPORATION

1700 E. CARY ST., RICHMOND 3, VA.



160,000 SQ. FT. SPACE

BUILDINGS SPRINKLERED

U. S. BONDED & PUBLIC WAREHOUSES

MERCHANDISE STORAGE & DISTRIBUTION

INSURANCE RATES 20c PER $100 PER YEAR

ROANOKE, VA.

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Finance and Storage

Pool Car Distributors

General Merchandise Storage

421-25 EAST CAMPBELL AVE.

ROANOKE 7, VIRGINIA

Represented by

Associated Warehouses, Inc., Chicago and New York

ROANOKE, VA.

ROANOKE PUBLIC WAREHOUSE

369 W. Salem Ave., W., Roanoke 5

Capacity 500 Cars — Automatic Sprinkler

Private Railroad Siding — Accurate Accounting

We make a specialty of Storage and Pool Car Distribution for Agents, Brokers and General Merchandise Houses.

Member of American Chain of Warehouses

SEATTLE, WASH.

EYRES TRANSFER & WAREHOUSE CO.

2203 First Ave., So., Seattle 4

Cartage — Distribution — Storage

Highest financial rating; new fireproof; A.D.T. sprinklered buildings; lowest insurance rate (10.2c); modern equipment.

SEATTLE, WASH.

LLOYD

Transfer Co. Inc.

POOL CAR DISTRIBUTION

MACHINERY MOVING, RIGGING AND HAULING

U. S. Custom Bonded

2400 Occidental Avenue — Seattle 4, Washington

SEATTLE, WASH.

J. R. GOODFELLOW, Pres.

OLYMPIC WAREHOUSE & COLD STORAGE CO.

MERCHANDISE STORAGE & DISTRIBUTION

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Cold Storage—Dry Storage—Rentals—Pool Car Distribution—Office Rentals Fireproof, brick const.; Sprinkler system; Insurance rate: 12.8c. Siding connects with all rail lines.

Bonded U. S. Customs: State License No. 2

Member of A.W.A. (C.S.) Wash. State Whsmns. Assn.

SEATTLE, WASH.

Seattle's One-Stop Warehousing Service!

MEMBER WAREHOUSEMEN'S ASSOCIATION

UNITED — Merchandise Storage & Distribution — U.S. Customs—Bonded Stores

CULBERTSON — Seattle's Exclusive Furniture Repository

SEATTLE TERMINALS, Inc.

Executive Offices: 1017 E. 40th St., Seattle 8

R. G. Culbertson, President — Wm. T. Lambe, Jr., Secretary

SEATTLE, WASH.

Lloyd X. Coder, Pres. Ellis L. Coder, Secy.-Treas.

SYSTEM Transfer & Storage Co.

Established 1919

2601-11 Second Avenue, Seattle 1

Complete Drayage, Storage and Distribution Service

"System Service Satisfies"

Member—A.W.A.—W.S.W.A.—S.T.O.A.

SEATTLE, WASH.

TAYLOR-EDWARDS WAREHOUSE & TRANSFER CO., INC.

1020 Fourth Avenue South — **Seattle 4**

WAREHOUSING • DISTRIBUTION • TRUCKING

Represented By

DISTRIBUTION SERVICE, INC.

New York—Chicago—San Francisco

SPOKANE, WASH.

P. C. HINTON, Owner

RIVERSIDE WAREHOUSES, INC.

E. 41 Gray Avenue, Spokane, 8

Telephone, Office and Stenographic Service

Specialize in serving food and related industries; pool car distribution; 44 trucks and tractors with semi-trailers. New 99,000 ft. modern warehouse, equipped with forklift tractors.

SPOKANE, WASH.

TAYLOR-EDWARDS WAREHOUSE & TRANSFER CO., INC.

310 W. Pacific Avenue — **Spokane 8**

WAREHOUSING • DISTRIBUTION • TRUCKING

Represented By

DISTRIBUTION SERVICE, INC.

New York—Chicago—San Francisco

TACOMA, WASH.

TAYLOR-EDWARDS WAREHOUSE & TRANSFER CO., INC.

401 East 21st St. — **Tacoma 2**

WAREHOUSING • DISTRIBUTION • TRUCKING

Represented By

DISTRIBUTION SERVICE, INC.

New York—Chicago—San Francisco

HUNTINGTON, W. VA.

Every facility for you and your patrons' convenience to secure your share of this Five Hundred Million Dollar market is available through

THE W. J. MAIER STORAGE COMPANY

1100 Second Ave., Huntington 10

Various aspects of the materials handling equipment rental situation—contracts, liability, responsibility, etc.—are discussed by Matthew W. Potts, materials handling editor, in this month's DA.

MISCELLANEOUS FREIGHT

(*Continued from Page* 37)

control number on each section of the case card, necessity for stenciling a case number is eliminated and possibility of writing a wrong number and producing the wrong case for a shipment is practically non-existent.

The only negative in a system depending upon information affixed to the case is that in handling cargo such record can be scuffed off. This has been overcome by using an extra heavy clasp envelope either tied, nailed or glued to the container, or where part of the record may remain on the case, using a heavy, transparent glue which both holds and protects the surface.

If your system of control of outgoing miscellaneous freight is an "inherited" plan, perhaps the outgrowth of whatever first appeared to be the most direct means of achieving a record of each load, it would be well to compare with other operations to determine if a re-planning of your entire control procedure could not bring greatly improved results.

Obviously, the loading out must be coordinated with the entire freight flow and records control. Whether the freight comes in from outside sources, from your own production or packing lines or from an inventoried, finished goods supply, it must be received, held and policed so that the right freight ends up at the right destination. The loading must also be coordinated with given rules and proven principles of proper freight transportation. Each load must be properly stowed, properly braced and protected. Finally, each shipment must be covered promptly by accurate shipping records.

A modern loading control procedure considers and embraces all of these considerations and seeks to deliver maximum efficiency at lowest per ton cost.

BETTER PACKING

(*Continued from Page* 33)

The container strength must also provide for stacking and side loads. Weather conditions require baffled ventilation holes to prevent condensation due to changes in temperature and humidity. When favorable weather conditions can be determined, interior preservation changes may be made and open crates used in place of closed.

The packaging engineer has a variety of variables to consider before he can specify which type of container is best for a particular job, and which, in essence, is the cheapest for the customer.

HIGHWAY STANDARDS

(*Continued from Page* 77)

operating within the field of motor truck transportation are indicative of the brighter standards future which lies ahead. The machinery for the development and promulgation of standard state highway regulations is now functioning through the AASHO and the AAMVA. These agencies in cooperation with the federal government and various private groups will, as time goes on, aid in breaking down conflicting state standards. With the attainment of uniformity of rules and regulation, the way will be opened to the development of truly standard truck and trailer models. The machinery for the development of increased numbers of standard truck parts is now in operation. As time goes on, the process of standardization will progress to include a wide variety of highway truck component parts.

When to these factors is added the additional fact that the trend of American industry is toward standardization, it can be seen that the truck of the future will be not only a better and safer vehicle but a more standard object . . . one that will be in a better position to compete with air, water, and rail transportation for its share in the business of transporting the products of American industry.

MADISON, WIS.

LOW INSURANCE RATE

CENTRAL
STORAGE AND WAREHOUSE COMPANY

COLD STORAGE
DRY STORAGE
FREEZER STORAGE

612 W. Main St., Madison 3

MILWAUKEE, WIS.

Service Minded

"Store American" For Economical Efficient Experienced Complete Merchandise Warehousing

SPECIALISTS IN POOL CAR DISTRIBUTION

AMERICAN WAREHOUSE CO.

General Office 525 East Chicago St. | Milw. Whse. Ass'n | Wis. Whse. Ass'n | *House No. 2* 302 North Jackson St.

Private Siding—Chicago & North Western Ry. 3rd Ward District

MILWAUKEE, WIS.

MILWAUKEE'S *only* COMPLETELY PALLETIZED WAREHOUSE

• Over 1½ Million Cubic Feet First Floor Space •

ATLAS STORAGE

DIVISION OF P&V-ATLAS INDUSTRIAL CENTER INC.
647 W. VIRGINIA ST. MILWAUKEE 1, WIS.

HANSEN STORAGE CO.

126 N. JEFFERSON ST., MILWAUKEE 2, WISCONSIN
Wisconsin's Largest Warehouse

STORAGE SPACE
POOL CAR DISTRIBUTION
CUSTOMS BONDED SPACE
BOAT DOCKAGE
STEVEDORING
MOTOR TRUCK SERVICE

Since 1904 we have served the Jobbing Trade.

Representatives:

AMERICAN CHAIN OF WAREHOUSES
Chicago Tel. Harrison 3088 • New York: Tel. Plaza 1234
INTERLAKE TERMINALS, INCORPORATED
New York .....Tel. Murray Hill 5-6397

MILWAUKEE, WIS.

LINCOLN
WAREHOUSE COMPANY

MERCHANDISE WAREHOUSING AND DISTRIBUTION

LOCATED IN HEART OF BUSINESS DISTRICT

Offices: 206 W. Highland Ave., Milwaukee 3

Member of A.W.A.—W.W.A.—M.W.A.

MILWAUKEE, WIS.

NATIONAL TERMINALS CORPORATION

954 So. Water Street, Milwaukee 4 **Tel. Mitchell 5644**

Milwaukee's most modern and best located Waterfront Warehouse. Automobile storage. Warehousing on unit basis for spot stocks. Storage "in transit". Pool car distribution. Customs Bonded.

Member of A. W. A. & W. W. A.

New York Office: 122 E. 42nd St., Phone Murray Hill 5-5960, New York 17, N. Y.

MILWAUKEE, WIS.

"Milwaukee's Finest"

National Warehouse Corporation

— STATE BONDED —

EVERY CONCEIVABLE WAREHOUSE & DISTRIBUTION SERVICE AFFORDED

Fidus et Fidelis
ASSOCIATED WAREHOUSES INCORPORATED

A.D.T. Service

468 E. Bruce St.
Milwaukee 4

C. & N.W.R.R. Siding

MILWAUKEE, WIS.

—Phone Marquette 7091

TERMINAL STORAGE CO.

100-112 W. Seeboth St.
Milwaukee 4, Wisconsin

Cooler, Freezer and General Merchandising Storage
Deep Water Dock, Private Siding
on C.M.St.P. & P. R.R.

SHEBOYGAN, WIS.

MEMBER MAYFLOWER WAREHOUSEMEN'S ASSOCIATION

SHEBOYGAN
WAREHOUSE & FORWARDING CO.

A Merchants & Manufacturers Warehouse

11th and Illinois Ave. Sheboygan, Wis.

Member of A.W.A.—May. W.A.—Wis. W.A.

CANADA

TORONTO, ONT.

M. A. RAWLINSON, Pres. & Gen. Mgr.

M. RAWLINSON, Ltd.

Established 1885 610 Yonge St., Toronto 5, Can.

Seven Buildings to Meet All Requirements for Modern Storage and Distribution

Customs Bonded. Pool Car Distribution. Household Goods Moved, Packed, Shipped and Stored.

Members of CanWA—NFWA—SAIFR—FWRA—TC&W—ALLIED VAN LINES

MONTREAL, QUE.

St. LAWRENCE WAREHOUSE INC.

3-VAN HORNE AVENUE, MONTREAL, CANADA

200,000 SQ. FT. OF MODERN FIREPROOF SPACE LOCATED IN THE EXACT CENTER OF THE CITY OF MONTREAL

Canadian Customs Bond. Private Siding—8 Car Capacity—Free Switching—All Railroad Connections

New York Representative: Frank J. Tully
277 Broadway, New York 7 Phone Worth 2-9428

MONTREAL, QUEBEC

Established 1908
W. G. KENWOOD, Pres. & Man. Dir.

Westmount Transfer & Storage Ltd.

205 Olivier Ave., Westmount, P. Q.

LOCAL AND LONG DISTANCE MOVERS

Private Room System for Storage

CRATING, PACKING and SHIPPING

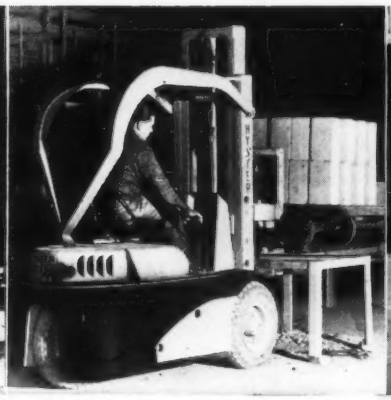
Charges Collected and Promptly Remitted

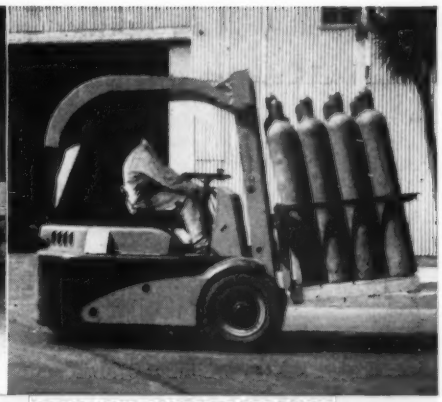
Member: N. F. W. A., Can. W. A.

CANADIAN WAREHOUSEMENS ASSOCIATION OFFICIAL SEAL

INDEX TO GENERAL ADVERTISERS

Public warehouse advertisments start on page 92 and are arranged alphabetically by states, cities and firms.





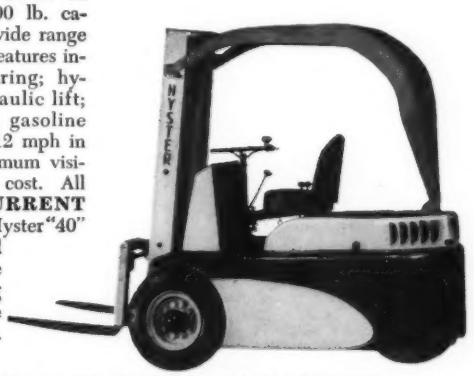
7 OUT OF 10 MATERIALS HANDLING PROBLEMS ARE SOLVED BY THE...

HYSTER 40

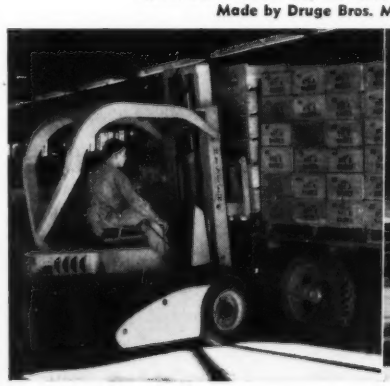
Here's the lift truck that has been engineered and built to do *more* jobs in *more* industries *THAN ANY OTHER LIFT TRUCK ON THE MARKET.* This 2 ton capacity unit on pneumatic tires works indoors or outdoors, on rough or smooth surfaces; hoists, transports and tiers heavy or bulky loads easily, quickly, economically.

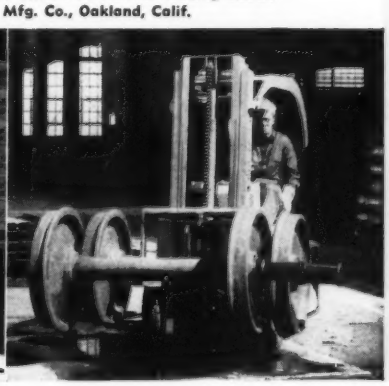
PNEUMATIC TIRES! CURRENT DELIVERY!

Pneumatic tires are easier on loads and floors. 4000 lb. capacity is ideal for a wide range of industries. Added features include trunnion steering; hydraulic brakes; hydraulic lift; powerful air cooled gasoline engine; speed up to 12 mph in either direction; maximum visibility; low operating cost. All of this, **PLUS CURRENT DELIVERY**, marks Hyster "40" as a money, time and labor saving machine that should be working for you right now. See your Hyster distributor. Write for literature.



Hyster Scale Model Toy Straddle Trucks for sale at leading stores.
Made by Druge Bros. Mfg. Co., Oakland, Calif.





GO TO YOUR HYSTER DISTRIBUTOR FOR CURRENT DELIVERY

ALASKA—Northern Commercial Co.
BIRMINGHAM, ALA.
S & T Equipment Co., Inc.
BROOKLYN, N. Y.—A. S. Rampell
BUFFALO, N. Y.—Rapids Handling Equipment Co. of Buffalo, Inc.
CALGARY, ALTA.
A. R. Williams Machy. Western, Ltd.
CHATTANOOGA, TENN.—Embry Brothers, Inc.
CHICAGO, ILL.—Hyster Company
CINCINNATI, O.—Oral T. Carter & Associates
CLEVELAND, O.—Morrison Company
DALLAS, TEX.—C. H. Collier Company
DENVER, COLO.—Paul Fitzgerald
DETROIT, MICH.—Bentley & Hyde
GRAND RAPIDS, MICH.—Bentley & Hyde
HALIFAX, NOVA SCOTIA
A. R. Williams Machy. Co., Ltd.
HONOLULU, T. H.—Electric Steel Foundry Co.
HOUSTON, TEXAS—C. H. Collier Company
INDIANAPOLIS, IND.
Central Rubber & Supply Co.
JACKSONVILLE, FLA.
L. S. Teague Equipment Co.
KANSAS CITY, MO.
Industrial Power Equipment Co.
LOS ANGELES, CALIF.—Hyster Company
LOUISVILLE, KY.—Embry Brothers, Inc.
MEMPHIS, TENN.
Hyster Co. of Louisiana, Inc.
MILWAUKEE, WIS.—Hyster Company
MINNEAPOLIS, MINN.—W. S. Nott Company
MOBILE, ALA.—S & T Equipment Co., Inc.
MONTREAL, P. Q.
A. R. Williams Machy. Co., Ltd.
NASHVILLE, TENN.—Embry Brothers, Inc.
NEW ORLEANS, LA.
Hyster Company of Louisiana, Inc.
NEW ROCHELLE, N. Y.
Eastern Industrial Sales Co.
OTTAWA, ONT.
A. R. Williams Machy. Co., Ltd.
PHILADELPHIA, PA.—Rapids Handling Equipment Co. of Phila., Inc.
PHOENIX, ARIZ.—Equipment Sales Company
PITTSBURGH, PA.—Equipco Sales Company
PORTLAND, ORE.—Hyster Sales Company
RICHMOND, VA.—Richmond Auto Parts. Inc.
ST. JOHNS, N. F.—City Service Company, Ltd.
ST. LOUIS, MO.—Wharton L. Peters, Inc.
SALT LAKE CITY, UTAH
Arnold Machinery Company
SAN FRANCISCO, CALIF.—Hyster Company
SEATTLE, WASH.—Hyster Company
TORONTO, ONT.
A. R. Williams Machy. Co., Ltd.
VANCOUVER, B.C.
A. R. Williams Machy. Western, Ltd.
VICTORIA, B.C.
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